THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

JULY, 1885.

AMPUTATION OF THE PENIS.

BY R. H. HARRISON, D.V.S.,
INSTRUCTOR IN ANATOMY AND LECTURER ON OPERATIVE SURGERY, SCHOOL OF VETERINARY MEDICINE, HARVARD UNIVERSITY.

THE operation of the amputation of the penis has been performed in various ways for many years; it is considered as a major operation in veterinary surgery, and one that the ordinary practitioner often dreads, for fear of an uncontrollable hæmorrhage, giving rise to a fatal result, also other complications, such as impaction of the sheath, stricture of the urethra, and blood poisoning. Therefore many curable cases are either aggravated by the application of caustic powders and solutions, which, if a malignant growth be present, is stimulated to increased activity of growth, or if the organ is paralysed, it is secured *in situ* by stitching up the opening of the sheath, and exposing the animal for sale, to delude some unwary purchaser. The indications for the operation are any disease of the penis or its covering, the prepuce, that has resisted ordinary means of treatment, also those which from the nature of the disease seem hopeless: carcinomatous and epitheliomatous growths, which are malignant, and have a tendency to recur; *warts*, when many in number, and after removal by the usual procedure of cauterisation or ligation, recur again and again, sometimes becoming the source of alarming hæmorrhages; again,

when the organ is covered with ulcers, or becomes permanently relaxed by paralysis, which sometimes follows as a sequence of Spinal Meningitis, or when it becomes exhausted by over-stimulation, as in the case of an entire animal that had covered so many mares the penis could only be withdrawn one half, allowing the protruding extremity to become wounded, ulcerated, and indurated from external injury.

A rapid review of the anatomy of the organ should offer several valuable suggestions for surgical treatment.

First.—It is composed of erectile tissue, which, in the soliped, is the corpus cavernosum, and forms the superior and lateral portions of the penis. The question naturally suggests itself, How much erection of the organ is likely to take place during or following the operation? In stallions this may prove troublesome, giving rise to occasional slight hæmorrhages after amputation, even when the vessels have been ligated, but it can readily be checked by douches of cold water to the prepuce, its walls or interior. During the manipulation, fear and restraint will, as a rule, overcome any tendency to erection; in geldings slight priapism is often noticed, but seldom necessitates any inteference.

Second.—The arterial supply from the external and internal pudic arteries, giving off the dorsals of the penis, and the cavernous artery. These vessels are flexuous, so that when the organ is allowed to resume its proper place, the velocity of the blood current is physiologically lessened; this fact of itself would be a factor in controlling bleeding, if erections do not occur. After amputation, the divided arteries and veins present open mouths, and can be easily secured; they lie principally at the superior border.

Third.—The retractile cords must be considered, as they are powerful, and will overcome the resistance of a strong ligature; especially will this be seen after the organ is divided—the penis will slip through the ligature and retract into the prepuce. This will necessitate its withdrawal, which is *difficult*, also give rise to much hæmorrhage, as well as bruising of the stump by the manipulations. This can be obviated by encircling the organ, above where the amputation is to be made, with a piece of

strong tape, tied as a bleeding knot, the ends being given to an assistant to hold.

Fourth.—The posterior pocket of the sheath, which is occupied by the penis when wholly withdrawn, is to be thought of, as it forms a receptacle for the accumulation of urine, pus, and the débris of growths, especially when they are so large as to prevent the protrusion of the organ; also during the first week or two after amputation, the penis is seldom elongated in geldings, so that in the healing of the stump much pus and urine collects, which, if allowed to remain, complicates the healing process.

Modus Operandi.—The patient is to be prepared for operation by dieting and local cleanliness; half an hour before casting is to receive a full dose of chloral hydrate as an anæsthetic; to be cast on the right side, and turned on his back, as if for castration, or a position which is more favourable, viz., draw the upper hind leg forward, by a side line passed over the neck and secured, then raise the extremities to an angle of about 45°, by passing the hobble rope through a ring overhead; examine the bladder per rectum, and if full evacuate it by the catheter; withdraw the organ entirely, as this effaces the prepuce, and thoroughly cleanse and disinfect it; hold it in position by a bleeding knot of tapes tightly drawn, applied two or three inches above the point of amputation, and pass to an assistant to hold. A twofold result is accomplished—first, the organ is ligated; secondly, it can be held in place until the operation is concluded. Introduce a catheter or sound, well oiled, into the urethra, beyond where the incision is to be made, and with a sharp bistoury make an incision downwards and backwards, dividing the organ in a circular manner to the sound or catheter; dissect the urethra away, so that it will project beyond the stump half an inch; ligate all the arteries and the larger veins with fine silk tied with a surgeon's knot, and the ends cut short; withdraw the catheter, and introduce a director in its place, and, with a curved blunt or probe-pointed bistoury, or scissors, incise the inferior wall of the urethra a distance of an inch or one and one-half inches, according to the size of the organ; suture the mucous membrane of the incised canal to the skin of the penis, so as to make a large triangular

artificial notch and meatus. Sutures to be applied with a fine curved needle, and carefully made. An advantage is gained by leaving the urethra a little longer than the stump—the sutures are not subjected to strain, the urethra is not stretched, and the flaps entirely cover the amputated end, thus checking hæmorrhage. The bleeding knot may now be relaxed *very* gradually, the penis allowed to retract into the prepuce, and the animal allowed to get up. The hæmorrhage following is slight, and can be readily stopped by dashing cold water against the sheath.

Consecutive Treatment.—Place your patient in the best possible hygienic conditions; for a few days let him occupy a single stall, and keep tied up. Restrict his diet, and combat colicky pains by small doses of chloral or opium, counteracting fever by febrifuges, shock by small doses of alcoholic stimulants. If the bladder is not emptied after six hours, apply steady pressure to the viscus by the hand in the rectum. It will often be observed that almost immediately after an animal is released from the hobbles he will at once micturate, the act being accompanied by tenesmus. Forty-eight hours after the operation, examine the parts, by introducing the oiled hand into the sheath. The swollen stump will be felt in the posterior pocket as a rounded protuberance. The sutures and notch can also be felt. This manipulation should be made very gently, so as not to excite bleeding; if suppuration has commenced, cleanse the parts with carbolised water. The stitches need not be disturbed until they are felt cutting through; then remove them by introducing a blunt-pointed pair of scissors. The ligatures on the arteries will come away in the discharge. The penis must not be withdrawn at any time, unless absolutely imperative, as the union between the mucous membrane of the urethra and stump will be interfered with or destroyed. As a rule, the swelling so often observed in surgery of this region is very slight, and rapidly diminishes by hot fomentations to the parts and exercise. The animal is laid up from two to three weeks. I have operated in this manner in a number of cases, to which I desire to briefly call your attention, as they seem to illustrate the benefits of this method of procedure.

Case A.—A bay stallion, twelve years old, 15.3 hands high, was said to have covered fifty mares during the season, some of them several times. It was noticed that after copulation erection quickly subsided, but the organ remained hanging in a pendulous condition for several hours, until finally it could not be withdrawn into the sheath but one-half. When seen, the penis projects from the prepuce six inches, is swollen, covered by ulcerations, and is indurated; the urethra is constricted to a distance of four inches. An operation was decided upon, and performed above the induration in the manner described, except that the division was made by a single incision. The hæmorrhage following was slight, erections were frequent, and tore away the sutures in several places; both were readily controlled by douches of cold water, which was especially useful in limiting the *duration* of erection.

The animal was put to work in a week's time; the parts were cicatrised in three weeks, leaving an artificial notch well-established. Several months afterwards, this animal was castrated on account of extreme viciousness.

Case B.—A chestnut gelding, seven years old, 15.2 hands high, presents an epithelioma, the size of an egg, involving principally the fossa navicularis, the inferior part of the gland pressing upon the urethra to constrict it, so that when the animal micturated the urine was thrown upwards and forwards, soiling the anterior extremities as high as the elbows. Amputation was performed an inch above the glans penis. This case did well; a year after the operation shows the stump covered by the mucous membrane of the urethra, and cicatricial tissue joining to the skin; the urethra represents a large V-shaped notch.

Case C.—Bay gelding, nine years old, 15.2 hands high, in poor condition, shows a large tumour-carcinoma, the size of a man's two fists, which occupies the entire gland, and several smaller tumours extend from it along the dorsum, four inches. The tumour is so large that it is difficult to withdraw the penis from the prepuce; the latter is filled with pus, urine, and débris from the growths. The organ is amputated six inches from its extremity, and the stitches are removed on the fourth day. This case was treated at the Veterinary Hospital of Harvard

University, was laid up sixteen days, and discharged fit for work. It was seen a week ago, two months after the operation; the stump is cicatrised, and the notch is well-established; during micturation the organ is protruded a little beyond the entrance of the sheath.

Cases D and E were cases of relaxation from paralysis following Spinal Meningitis; otherwise the patients were in perfect health. They were operated upon as described above, with a successful result in both.

One other case, which was operated upon in a different manner, and terminated fatally, may be instructive. The subject was a bay gelding, about sixteen years old, sixteen hands high, and in an impoverished condition, also treated in the hospital; he presents a large cauliflower growth, a carcinoma, the size of a man's head, hanging just outside the sheath. At first sight it seems to invade that structure, but examination proves the penis affected. The glans penis is principally involved; the dorsum and sides also show similar growths for a distance of four inches. The exit of urine is interfered with by the large growth, which presses on the meatus. The patient is prepared, cast, and catheterised, evacuating three gallons of *normal* urine. The organ is ligated above the growths, and a circular dissection of the skin made anterior to it with a scalpel, and the remaining portion removed by the *ecraseur;* the urethra is divided and tacked to the skin as in the previous cases. Ligation is continued, and a silver canula is introduced into the urethra above the ligature, and kept *in situ* by tapes. When the animal is released and placed in loose box, exhibits slight colicky pains for two hours, afterwards lies down, and remains quiet until late in the evening, when he strains violently, passing no urine through the canula.

The next day, the 9th of the month, the conditions are loss of appetite, temperature 101·3°, pulse 80, respiration 18; is cast, and the ligature removed; at once a discharge of high-coloured urine escapes. The parts are treated antiseptically, and he is given internally a dose of purgative medicine, also small doses of Tincture Opii, with alcoholic stimulants at intervals during the day; in addition flax-seed tea is given, which is readily taken.

19th.—Temperature 101, pulse 136, respiration 24; passes large quantities of high-coloured urine during the day, accompanied by much tenesmus. During the evening the action of the purgative medicine was marked, and a reduction in the number of the pulse to 80.

From the 11th to the 14th the temperature ranges from 100-100·3°, pulse from 45-68, respiration 18-28; the appetite steadily improves. During these four days, at one o'clock p.m., it was observed that the pulse and respiration were accelerated for a period of two hours, pulse from 72-84, respiration 60-64.

14th.—Is re-cast, as the sheath is intensely swollen; the stump is hard to the feel, and the urethra is constricted one and one-half inches up, where it is dilated.

To the 21st there is improvement, the urine has cleared up, and there is less tenesmus; the sheath is swollen about the same, and is punctured on both sides, and the hæmorrhage resulting is stimulated by hot fomentations.

22nd.—The swelling has diminished, the appetite continues good, and the patient walks with less difficulty; the temperature is 100°, pulse 60, respiration 12.

23rd.—Is found down in the morning, and is helped up with difficulty; the sheath and scrotum are most intensely swollen, pitting on pressure, and rendering the animal almost unable to move. The countenance is anxious and haggard, and the body is covered by patches of cold perspiration. He soon lies down, and, when examined, shows a large fluctuating tumour at the superior wall of the prepuce, which nearly occludes its passage; when punctured a serious venous hæmorrhage ensues. At the end of the stump, filling the artificial notch, is felt a long shred of tissue, but whether a piece of ligature or mucous membrane it is difficult to decide. At six p.m. is in great distress, pulseless, straining violently, and passing small jets of urine, in which we note débris of mucous membrane and pus. He is pithed, and the autopsy shows body very much emaciated; *abdomen*, the floating colon and small intestines present slate-coloured spots and streaks on their external surface; their sub-mucous coat is infiltrated with bloody serum; the bladder is strongly adherent to the small colon; the peritoneum shows sub-serous infiltration.

Penis.—The amputated extremity beyond the point of ligation is gangrenous; the mucous membrane of the urethra hangs from the notch a distance of five inches. There is found a complete slough of the mucous membrane of the entire urethra, extending into the bladder. The *sheath* shows marked Cellulitis, Thrombosis in the larger vessels, also a large diverticulum above the sheath, irregular in outline, and filled with very offensive sanious pus and broken-down tissue; the lymphatic glands are enlarged, some having undergone degeneration.

Bladder contains small quantity of urine, pus, and débris. The mucous lining has completely sloughed, its internal surface is yellowish-green in colour; the muscular coat is thickened and blackened by a phlegmonous inflammation; the ureters are also slightly involved. The etiology of this case seems to have been a sloughing, or progressive dissection, from the point of ligation backwards, probably due to the ligature itself, and from the irritation of the canula in the urethral canal, together with the absorption of necrosed material. What is worthy of note, was the low temperature throughout, and the very acute Cystitis developed when the urine was retained less than twelve hours.

PITYRIASIS (TROPICAL).

BY RICHARD W. BURKE, M.R.C.V.S., A.V.D., INDIA.

THIS form of skin disease, affecting principally the mane and tail of the horse, called "*Khajoolee*" (or Mange) in the language of Indian nosology, and shown as *Eczema papulosum* in the returns of some veterinary surgeons, and *Prurigo*, *Psoriasis*, etc., in those of others, appears to me to be simple Pityriasis, and for many reasons. It is attended by no one symptom, or symptoms, which may be said to belong to Eczema, save Prurigo, is not vesicular in its origin, and has no peculiarities especially characterising it to merit the above appellation. The disease is not an eruption in the form of a *vesicle*. It is a proliferation. Small papules are noticed to develop themselves in the course of the crest and about the root of the tail, and in due course

desquamation of the cuticle ensues about each papule, from which minute white scales are regularly shed; and we have thus eventually produced a surface of "renewed desquamation," attended by fresh developments and increasing irritation, with its results; extension of the process into the corium and subcutaneous connective tissue, which are sometimes themselves implicated from secondary inflammation—but the latter is always a complication, and does not furnish any reliable clue to the solution of the true pathological change found set up, which is in its inception distinctly *superficial* in character, and amenable to proper treatment. A prominent, and not the least troublesome, symptom of the disease is *prurigo*, which causes the subjects of it to rub themselves violently against adjacent articles, producing secondary symptoms of inflammation—heat, pain, swelling, abscess, and sometimes even permanent induration. *Sclerosis*, of the skin and subjacent connective tissue may follow as a remote termination, which, in a certain percentage of cases at least, proves of great diagnostic value, and heralds an attack of the disorder in the following year.

The crusts, which at first seem small, scaly, and transparent, become, during the later stages, larger, opaque, and even adherent from admixture with inflammatory products.

It is, moreover, important to note that this disease would seem to be confined to extra hairy parts, or to parts fairly covered by hair, not much to skin with little or no hair; *instance*, the disease never spreads to the under surface of the tail, although it attacks every other portion of it supplied by long hairs.

Although attacking several horses in a troop of cavalry or battery of artillery simultaneously, this malady is not contagious in the ordinary acceptation of that term, as epithelial scrapings of papules from affected animals prove inoperative in reproducing the morbid process when inserted under the skin of others not similarly affected, even when special seats of the disease have been selected in the latter for experimental inoculation, viz., the mane and tail. The disease is not characterised by a pyrexial state, and is therefore *non-specific*.

One of the results of its action on the hair is evidenced in an undue coarseness of that appendage, which is especially charac-

teristic of this disease. Another remote, though not infrequent result of it is an apparent greyness of the hair noticeable in spots thus affected. These latter changes are, of course, dependent on inflammation, causing irritation of the hair-bulbs.

The disease, examined microscopically, shows, in the field of observation, epithelial cells, fibrils, granular particles of pigment, besides tissue shreds and other inflammatory products developed in the process of secondary inflammation.

In treating this disease I am afraid we are all apt to follow fashion, to prescribe remedies and modes of treatment at the time in vogue, and to forget the treatment which common sense, combined with a reasonable amount of previous acquaintance, would dictate to us. Although I am no believer in so-called "specifics," I respect the opinion of Erasmus Wilson, who recommends the use of tar, in one or other form, in cases of skin disease generally; and so in my own hands I have found the use of *cheerpine oil* to promise the best results in the treatment of this form of tropical Pityriasis common to the horse in India. This preparation, to be of any good, must be applied, as experience indicates, in its undiluted state. I sometimes alternate my dressings with that of *kerosine oil*, which, in a small percentage of cases of this sort, has proved equally effective. A necessary preliminary to treatment will be the thorough cleansing of the affected parts by soft soap and warm water. The *nitrate of silver solution* has been occasionally here tried by me, but without evidence of its efficacy. My experience of the cheerpine oil is limited, since I have tried it for two seasons only, yet I may venture to entertain the apprehension that unless the disease for which it is especially appropriate be carefully determined, the good which it is doubtless capable of effecting will be lost to veterinary practice. I do not suppose that veterinary surgeons expect in the cheerpine oil, or any other article of the materia medica, a universal remedy for this form of disease of the skin common to horses in India; but I have had opportunities of learning something of the action of cheerpine oil in this affection, and may safely pronounce it to be an improvement over all the other remedies suggested by a state of popular credulity. I have seen so many cases of the disease in the two

years, that I feel warranted in giving a strong opinion that any treatment to be useful should be early applied, otherwise the disease tends to assume a chronic type, and will then prove rather troublesome.

There is, perhaps, no subject in Indian military veterinary practice more interesting, and on which facts are more scanty, and its nosology less certain, than this, which must be my only plea for making these notes.

It is essential that all officers in charge of batteries of artillery or troops of cavalry out in India, having no veterinary surgeons attached to them, should be imbued with the idea of the importance of recognising the right *pathology* of disease before attempting its treatment on mere hit-and-miss principles. Hence we have to recognise what may be termed the *befingerte* and the *unbefingerte* types of cases to be met with in our service in India; and to the former cause especially we have to trace some of the untoward results of this disease I have just enumerated, but more particularly *permanent induration of the crest*, which is only produced as a result of certain heroic modes of treatment in operation. I do not desire that my treatment should alone be tried; I believe essentially the same results can be got by recourse to other as rational modes of proceeding. I do not therefore wish to dogmatise upon this or that preparation being employed, but in the selection of remedies for this affection let it always be done by one qualified for such a selection. It cannot be too strongly urged that *recurrence* in many cases also depends to a very large extent indeed upon how they were first dealt with. Internally, diuretics have been prescribed by me, with the view to relieving cutaneous hyperæmia.

Editorial.

PROFESSIONAL PROTECTION.

In our correspondence columns a writer publishes a letter over the *nom de plume* of "A Surrey Veterinary Surgeon," drawing attention to a subject which we have frequently commented upon, and in which is involved a question that calls for prompt solution. Now that we possess an Act of Parliament giving us, among other privileges, the power to protect our own special titles, and to suppress and punish impostors who attempt to prey upon the public and the profession by designating themselves what they are not, and whose names are not to be found in the Register of Veterinary Surgeons, the problem is, How is the letter of the law to be carried into execution? The Act in regard to its operation in such cases is simplicity itself, the 16th and 17th Clauses distinctly specifying who are liable to prosecution, while Clause 19 determines how the law is to be carried into effect with regard to them. In the latter clause it will be seen that the procedure for fines and imprisonment is extremely simple, and involves but little trouble or expense to the prosecution, while the law is laid down so clearly that magistrates or justices should have no difficulty or doubt in dealing with such cases. So far, so good; but the question now is, Who is to undertake the prosecutions? The Act states that a prosecution *may* be instituted by the Council of the Royal College of Veterinary Surgeons, but shall not be instituted by a private person without the written consent of the Council. It is needless to say that the Council of the Royal College has no funds at its disposal for the institution of such prosecutions, and its poverty otherwise debars it from drawing upon any surplus it might have for other purposes; while, as a correspondent points out, if a member of the Royal College takes proceedings, after obtaining the sanction of the Council, he is not only out of pocket in doing so, but "he is simply bidding for his own unpopularity in his neighbourhood, and is immediately charged with selfishness." It is evident, therefore, that the plan we some time ago recommended, and which the "Surrey Veterinary Surgeon" also suggests, should be at once adopted. A society should be formed for the protection of the profession, and the prosecution of men who assume designations to which they have no right; it might be called "The Veterinary Defence" or "Veterinary Protection Society," and it should be maintained, as our correspondent suggests, by an annual subscription (which need only be small) from members of the profession. There is already a society in existence which, as its name implies, should be made to embrace this object. We allude to the Defence Society, which would have its reputation and its value enhanced, as well as its contributories increased, by undertaking this most useful and important duty. The profession must look after its own interests, for others will not; and now that we have ample legal protection afforded us, we have merely to put the law into motion in order to free ourselves from the injury and injustice caused by unprincipled persons. We hope soon to hear that the matter has been taken up energetically, and a commence-

ment made to carry out this provision of the Act; for we are cognisant of several instances in which certain of these individuals, either through ignorance or mere bravado, are palming themselves off as "registered practitioners," or even members of the Royal College, reaping whatever benefits may be attached to such titles, and deluding the public, which must now look to the profession to protect it while we are protecting ourselves. If this protection is not ensured, the fault is entirely our own, and not that of the country which has so liberally done its duty to us.

THE OUTBREAK OF THE EPIDEMIC AMONGST HORSES IN LIVERPOOL.

BEING A PAPER READ BEFORE THE LIVERPOOL VETERINARY ASSOCIATION

BY THOMAS GREAVES, F.R.C.V.S.

WE are met together to-night to consider further the cause of the outbreak of disease amongst the horses belonging to a firm in Liverpool, about last March. If my memory is correct, there were about thirty-two or thirty-five horses attacked; they were of all ages, and in different degrees of condition. In a stud of about seventy-nine or eighty horses, about fifteen of these thirty-five died—some dying in a few hours, others in a few days; the remainder recovered, some partially and others more completely. They were all attacked in the same obscure and extraordinary manner, without any assignable cause; some suffered more severely than others, being probably more susceptible. The reason all were not attacked was, some of them being less susceptible, or not susceptible at all; and this was the only stud of horses that experienced this attack of disease in Liverpool. The symptoms were a staggering gait and an affection of the larynx producing suffocation; and unless relieved by tracheotomy, death put an end to their suffering in a very short time. Ten were operated upon, and eight died. Their pulse was said to be normal, and bowels more or less inclined to constipation. These cases were unusual cases; there was an absence of initial febrile symptoms. They were exceedingly interesting cases. To me it is a matter of deep regret that the full particulars have not been recorded in the journals for the benefit of the profession, especially since such a full and scientific investigation and discussion have taken place upon it, and when we remember the kind interest which Professor Williams—who is one of the most experienced, most practical, and, at the same time, the best microscopist we have—has taken in the case, the time and immense trouble he has bestowed on investigating the matter microscopically. The conclusion he arrived at was that it was an Anthrax disease, that it was due to certain germs or bacilli in the blood (Professor Williams is still engaged in cultivating these germs), derived from the dirt encrusted on the outside of the lentils, or "mutters," as they are sometimes called, which the horses had been for some time fed upon, *without the slightest injurious effects being produced.* These lentils are really "koultee," described by Mr. Meyrick. It was said that these horses had been fed upon very indifferent hay for some time past. These cases were also very carefully investigated microscopically by an eminent surgeon, who had little or no experience in horse pathology or the symptoms of their diseases, and Mr. William Leather. They did not find it to be Anthrax disease; they studied the morbid anatomy theory, and found it to be an affection of the nerve cells and motor cells; fatty degeneration and atrophied muscles; paralysis, with

atrophy of the tissues in the neighbourhood of the larynx, the spinal cord, and its nerves. Now, these two eminent microscopists, Professor Williams and the surgeon, could not arrive at the same conclusion; the one could not believe in the theory of the other; nay, they could not only not agree, but were directly antagonistic to each other's theory; there was incompleteness in their premises and their conclusions. Now, one of them may have been right, and the other wrong; or they may have both been right or both been wrong in their conclusions on this abstruse problem. The ambiguous anomaly in which the case was left by these two adverse opinions or theories, formed on insufficient proofs, is likely to cause us to incline to the view (to say the least of it) that they must be highly problematical. I feel a desire to divest the case of the mystery that seems to surround it. To simplify it, we all want to see every doubt cleared away. Let us leave the region of theory, and pass into the region of fact and common knowledge, and, if possible, arrive at a safe and accurate conclusion, so that in future we shall be able to grapple with it and stamp it out at once. In the first place, then, let us direct our earnest attention to the character of the disease itself. Now, atmospheric epidemics soon expend themselves; not so in epidemics arising from poison in food or water. Was it any of those natural diseases known and recognised as constitutional diseases? I think the answer to this question will be, *No!* Was it some mysterious disease or epidemic which only pays us a visit at long intervals of time? The answer is, *No!* Was it some contagious disease, or some pestilence floating in the atmosphere? Again the answer is, *No!* Was it a consequence of living in a foul, ill-ventilated stable, breathing a vilely contaminated atmosphere ascending from putrid drains? Again the answer is, *No!* Was it from some impurity in the water the horse had to drink? The answer is, *No;* neither was it from the work the horse performed, nor from the severity of the weather. We are now bringing things to a focus; we are bringing the guilt home to the true cause. It was something which was contained in the food. The destroyer was, without doubt, concealed either in the general provender or in the hay. Let us try again to find him and drag him out to the light of day.

We are informed that these horses had been fed for some time on hay of an inferior quality. Well, what of that? Many other horses eat hay of an inferior quality, and no such result is produced; we are also told that these horses had been living for some considerable time previously upon mutters, lentils. Well, what of that? Many other horses eat lentils, without such results being produced. It was proved that these lentils were sound and good. The deleterious ingredient or principle, whatever it was, although washed, was said to be adhering to the outside of the lentils—I understand that one of the veterinary surgeons fed his private horse for some time on these lentils without the slightest injurious effect being produced. I believe that far the best and far the wisest thing to do is to hold them to be innocent in this instance. I hold in my hand a statement from one of the largest owners of horses in Lancashire, in which he says: "I have used scores of quarters of these lentils or vetches as food for my horses, and so far from their being dangerous, no horse could do better than they did while living on them; not the slightest ill effect was produced in any way." We know also that in India lentils are the principal or staple diet of thousands of horses, and that such an affection as these horses suffered from is entirely unknown there. Therefore I shall acquit lentils of any blame whatsoever in the production of this outbreak of disease in Liverpool, and dismiss the case so far as they are concerned. Professor Williams coincides entirely in this view. Mr. Meyrick has never heard of their producing such disease in India. All the evidence (according to my thinking) is very strong in fixing the blame on the hay—not necessarily bad hay, but hay happening to contain certain poison-

ous grasses. We know that some grasses or herbs, when cut at particular stages of their growth, when the bloom or seed is in a certain stage, are dangerous to health and to life; we know that in certain years in some localities there are fungus growths upon various grasses that are of a poisonous nature. Dr. Cobbold says many grasses are specially poisonous. The Russians lost seventy horses out of 300 in the Crimea from hay containing chickweed; we all know the deadly effects that ergot, hellebore, foxglove, and other plants have upon horses and cattle; we all know the deadly properties contained in yew. It is nothing to be wondered at that so many horses were attacked—twenty as likely as one, provided they be equally susceptible. There are many other herbs and plants that produce effects similar to those observed in these horses in Liverpool. I have been called in consultation on several occasions to outbreaks of disease of an alarming character, both in horses and in cattle; in each of them the disease was plainly traceable to some poisonous ingredients in the herbage, that was at once and totally discontinued. The plague ceased; of course those animals that had partaken of the largest quantities or those most susceptible, died, or might linger on for a long time suffering from the effects and damage done to the system. I dismiss every other theory in these cases. I think it is as clear as typhoid epidemic produced by sewage poison.

THE ROYAL ACADEMY OF MEDICINE OF BELGIUM.

AT the meeting of this distinguished Medical Corporation on May 30th, nine Foreign Corresponding Members were elected, among whom were Dr. Fleming, Principal Veterinary Surgeon of the British Army, Professors Bollinger (Munich), Brouardel and Paul (Faculty of Medicine of Paris), Hofman and Rosenthal (University of Vienna), Koch (Berlin University). At a more recent meeting of the Royal Society of Medicine and Public Hygiene of Belgium, Dr. Fleming was also elected a Foreign Corresponding Member. This compliment paid to the veterinary profession of this country will, we feel assured, be heartily appreciated by our colleagues, and will show the much higher and juster estimate in which veterinary medicine is held on the Continent than in this country. More especially is the compliment conferred by the Royal Academy remarkable from the fact that, though Sir James Paget, Sir Spencer Wells, Professor Huxley, and Drs. Carpenter and Bowman, are honorary members, hitherto the higher distinction of Foreign Corresponding Member has only been bestowed on one Englishman—Dr. Balfour.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD JUNE 1st, 1885.

H. J. CARTWRIGHT, Esq., in the chair.

Members present:—Sir F. Fitzwygram, Bart., M.P.; Professors Axe, Pritchard, Williams; Messrs. J. S. Carter, B. Cartledge, J. Roalfe Cox, E. C. Dray, W. Duguid, T. Greaves, M. J. Harpley, H. R. Perrins, A. H. Santy, T. H. Simcocks, H. L. Simpson, P. Taylor, W. Whittle, W. Woods, F. W. Wragg, and the Secretary.

The SECRETARY read the notice convening the meeting.

The SECRETARY announced the presentation of the model of a hunter to the Royal College by Mr. A. A. Jones, now in the Soudan.

Mr. CARTLEDGE proposed the thanks of the Council to Mr. Jones for his presentation; it was a very handsome gift, and well deserved their best thanks. He had himself very much admired the model when visiting the Academy last year.

Mr. DRAY seconded the motion, which was agreed to.

The Special Meeting.

Mr. DRAY said there was a statement in the notice of business that a special meeting was to be held that day. At previous meetings at that period of the year the only business transacted had been the election of officers. He had written to Dr. Fleming upon the point, and Dr. Fleming replied that the second meeting was informal, and that until the newly-elected Vice-Presidents had the opportunity of being present all business done would be *ultra vires*, the Council not being complete. He therefore thought the only business they could transact that day was the election of the officers.

Mr. SIMCOCKS said the same point was raised last year, and it was then unanimously decided that it was unfair to bring country members from long distances to transact purely formal business, and that therefore in addition to the election of officers there should be a special meeting for the transaction of other business.

The SECRETARY said for two or three years past there had been some doubt about this, and there seemed to have been a division among the Council. He had therefore consulted the solicitor, who would be present before the special meeting commenced.

Professor WILLIAMS called attention to the inconvenience occasioned to Scotch members owing to the meeting being convened for Monday. The usual practice had been to hold the meeting on the Tuesday before the Derby. In order to attend a Monday meeting, unless they were willing to travel on Sunday night (which, for his part, he objected to), it was necessary to leave Scotland on the Saturday morning. There were no trains on the Sunday until the night, the Scotch objecting to Sunday travelling. He hoped that in future the Council would take this into consideration.

The SECRETARY then read the minutes of the previous meeting.

Professor PRITCHARD asked whether it was a fact that their minutes were absolutely published before they were confirmed by the Council.

The SECRETARY said that was so. The profession wished to know the proceedings of Council as soon as possible.

Professor PRITCHARD said in that case he, as a member of the Council, should object to that proceeding going on any longer. It was a very improper course to take.

Sir Frederick FITZWYGRAM said the report that appeared in the VETERINARY JOURNAL was not the minutes of the proceedings of the Council, but the actual proceedings of the Council as taken down by the shorthand writer. They had no authority as minutes until they were confirmed by the Council. The public liked to see the records of proceedings as early as possible. It was the same in the Houses of Parliament; the debates were printed daily, but the authorised report did not appear until it was published by Hansard.

The minutes were then confirmed.

Letters were read from Messrs. Fleming, Walley, and Mulvey regretting their inability to attend the meeting of the Council.

A letter was read from Mr. H. E. Beddington calling attention to the conduct of veterinary surgeons.

On the motion of Mr. CARTLEDGE, seconded by Mr. TAYLOR, the letter

was ordered to be laid on the table, its receipt to be merely acknowledged by the Secretary.

Election of Officers.

Mr. CARTLEDGE moved the election as Chairman for the ensuing year of Professor Robertson, of the Royal Veterinary College. He was a man they all esteemed and who occupied a high position in the profession.

Mr. TAYLOR seconded the motion.

Mr. E. C. DRAY said he had been requested by several gentlemen to propose Mr. Cox as President. Mr. Cox possessed all the attributes calculated to make an excellent President, and he was sure the Council would not regret his election.

Mr. PERRINS seconded the motion.

Mr. CARTLEDGE said in that case he would withdraw the name of Professor Robertson. Mr. Robertson did not wish to be put in opposition to any other member of the Council, and inasmuch as his election would not be unanimous, he thought, with the consent of his seconder, he would withdraw Mr. Robertson's name. He should hope at some future time to see that gentleman the President of the Council.

The ballot was then taken, and Mr. Cox was declared to be unanimously elected.

Mr. Cartwright then vacated the chair, which was taken by the newly-elected President.

The PRESIDENT said he could not recall an occasion on which he had felt at so great a disadvantage. He had from some unknown reason always enjoyed very great consideration from the members of the profession, and of the Council in particular, but this last crowning evidence of their favour towards him had been most unexpected. He had not the slightest idea that such a thing was in contemplation, and, indeed, some fifteen months ago when, it was proposed to him by a too-zealous friend that he should be nominated, he begged that such a course might not be taken. He felt, however, that the honour was thrust upon him, and it would be most ungracious to say no. He would ask the Council to bear with him. By himself single-handed he should very imperfectly perform the duties of the office, but with their kind co-operation he hoped to be able to perform them to the satisfaction of the Council and to his own.

The following gentlemen were nominated as Vice-Presidents :—Messrs. Barford, Blakeway, Borthwick, Briggs, Cartwright, Edgar, O. Hills, W. Pallin, Reynolds, Alexander Robinson, J. F. Simpson, W. Wilson, and W. Woods.

On the ballot being taken Messrs. Cartwright, Pallin, Barford, Blakeway, Simpson, and Woods were declared elected.

The PRESIDENT said their next business was the election of Treasurer, and if Mr. Dray was willing again to accept the office, he scarcely thought that the Council would nominate any other gentleman.

Mr. GREAVES said he had great pleasure in proposing the re-election of Mr. Dray.

Mr. SIMPSON seconded the motion, which was agreed to.

Mr. DRAY said he was very much obliged to the Council for the compliment they had again paid him. He must remind them that their expenses and work were accumulating, and with what they had looming in the distance, they would be very heavy. It therefore behoved them to exercise a rigid economy, and they might rest assured so long as he held their purse-strings he should endeavour to preserve their finances as much as possible. As their treasurer he had had perhaps more opportunities than any other member of the Council of knowing how well their Secretary performed his duties.

Those duties were increasing, and he must say that Mr. Hill had faced those increasing duties with great zeal and energy. He therefore proposed that Mr. Arthur W. Hill be re-elected as Secretary to the Council.

Mr. CARTWRIGHT seconded the resolution, which was unanimously agreed to.

The SECRETARY returned thanks for his re-election.

The Special Meeting.

The PRESIDENT said that Mr. Thatcher, the solicitor to the College, was in an adjoining room if it was desired to take his opinion as to whether they could legally proceed with the business of the special meeting.

Mr. WHITTLE moved that Mr. Thatcher's opinion be asked upon this point.

The suggestion was agreed to.

The President having explained to the solicitor the point for his consideration,

The SOLICITOR said his opinion was that for the purposes of a meeting everybody entitled to be present at that meeting ought to be summoned. It appeared that some of the Vice-Presidents who had just been elected, and who were not present, were now entitled to be present at the meeting, and if the business was transacted in their absence they might afterwards dissent from what was done.

Mr. SIMCOCKS said he would suggest, as a somewhat similar state of circumstances would arise next year, that prior to the next quarterly meeting the Secretary should be requested to take from Mr. Thatcher an opinion as to whether a special meeting could be held on the day appointed for the election of officers either prior or subsequent to that election.

This suggestion was assented to by the Council, and the solicitor was instructed to report accordingly to the next meeting.

The PRESIDENT said as the solicitor advised that the summoning of this second special meeting was informal their business had now come to an end, and he had again to thank them very much for what they had done on his behalf.

Mr. DRAY suggested that a special meeting should be called within a fortnight from the present time, because it was extremely necessary that the various committees should be elected before the July meeting. The meeting of the Finance Committee should take place antecedent to the quarterly meeting, and that Finance Committee was not now in existence.

Mr. SIMCOCKS said a meeting for the election of the committees might be held, and if it was understood that no other business would be transacted it would not then be necessary for country members to come long distances in order to attend.

Mr. DRAY proposed that a special meeting should be called for the 17th June. At that special meeting all the business for which notice had been given that day could be transacted, and the committees could then be elected for the July meeting.

Mr. WHITTLE seconded the motion.

Mr. SIMCOCKS said that Mr. Simpson, Mr. Wragg, and himself would withdraw their notices for the next meeting, so that it might be understood that the special meeting for the 17th June was for the sole purpose of appointing committees and nothing else.

Mr. DRAY said that meeting would have to receive Mr. Thatcher's report.

Professor PRITCHARD said the Council must take into consideration this fact, that the committees did by far the greater bulk of the work of the whole year, and therefore their appointment should hardly be delegated to seven members of the Council.

Mr. SIMPSON asked what was the objection to postponing the election of committees until the quarterly meeting.

Mr. DRAY said the objection was that there were no committees in existence. The Finance Committee should meet antecedent to the regular meeting, and until that committee was reappointed no report could be brought up at the meeting by the Treasurer.

Mr. TAYLOR asked what objection there was to appointing the committees at once.

The PRESIDENT said the solicitor stated that it would be informal to elect committees at that meeting.

After some further conversation it was arranged that the notices of motion which had been given for the special meeting that day should not be taken at the meeting on the 17th June, but should be deferred until the quarterly meeting in July, but that any other business that was necessary might be transacted at the special meeting on the 17th June, in addition to the appointment of committees.

Mr. DRAY proposed his resolution in that form, that the meeting of the 17th of June should be for the appointment of committees and for other business.

Mr. WHITTLE seconded the motion, which was agreed to.

Mr. DRAY then proposed, and Mr. WHITTLE seconded, a vote of thanks to the President, which was agreed to.

Mr. WHITTLE proposed that the warmest thanks of the Council be given to Professor Walley, their late President, for the good service he had been able to render during his year of office.

Professor WILLIAMS seconded the motion, which was agreed to.

The Fellowship Examinations.

The SECRETARY said he had a list of twelve or thirteen gentlemen coming up for the Fellowship examinations, and asked that these might commence on the 24th of June, which was agreed to.

The New Building.

Mr. GREAVES asked whether any arrangements had been made with reference to laying the foundation-stone of the Royal College.

Mr. DRAY said if such a proposition were entertained it would delay the building at least a month.

Mr. SIMPSON thought that instead of a ceremony at the laying of the foundation-stone, it would be better to have a house-warming when the building was erected.

The proceedings then terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

A MEETING of the Society was held on February 5th, at the First Avenue Hotel; Mr. F. W. Wragg (President) occupied the chair.

Mr. C. Sheather exhibited the novel shoe which he had devised and patented. The principle of its construction was the union of a tip with a leather sole, and a compound leather and india-rubber cushion at the heels. He showed the various portions of the shoe and pad in the different stages of manufacture, and explained the difficulties he had to contend with in securing a firm union between them. Among the advantages of the shoe are that it gives the horse a good foothold, and so lessens concussion that the natural elasticity of the pasterns and fetlock is allowed full play. Horses shod for a few months with these shoes have been found to travel with greatly

improved action, others have recovered soundness, and bent-kneed horses have regained a straight position of limb. He was of opinion that in the majority of cases bending of the knees was a consequence of pain at the posterior part of the foot ; the horse, being afraid to allow his weight to descend upon the heels, threw it more forward, keeping his pasterns upright by muscular exertion.

In answer to questions, Mr. SHEATHER said the first cost of the shoe would be greater than ordinary shoes and pads, but that the difference would be considerably lessened by taking into account the long time the shoe is found to wear. In many cases, after a month's wear it was only necessary to renew the iron tip. Then the cost of production would be vastly lessened directly a large demand arose for the shoe, as the new machinery constructed would quickly turn out a great number. Above all points, in estimating the relative value of this system of shoeing, was to be reckoned the great saving of horse-flesh ; it was in the legs that horses used for hard work in towns first failed, and there was, he said, in this method of shoeing the means of preventing that injury to the feet and limbs which resulted in time from ordinary shoeing.

Mr. Sheather's exposition and theories were followed with great interest, and the time taken up being considerable, it was resolved to postpone further consideration of the matter till the next night of meeting.

Another monthly meeting was held on March 5th, at the same place ; the Fellows present were Messrs. F. W. Wragg, W. Hunting, T. S. Price, Professor Pritchard, and Mr. T. Moore.

The discussion was commenced by Mr. W. HUNTING, as follows : I did not hear Mr. Sheather's remarks at our last meeting, but I have read his pamphlet, and am struck by the fact that it was written after a complete trial of the shoe ; it is therefore no hypothetical theory of expected benefits, but a scientific explanation of proved results. We have given us a clear idea of the way in which the shoe does good, and there is well explained the gross injury done to horses' feet, and indirectly to their legs, by bad shoeing. The pamphlet starts with the assumption that horses' legs wear out more quickly than they ought, and that the animals are prematurely "used up." Mr. Sheather says this is chiefly due to bad shoeing, and I think we can agree with him ; he says we see the effects in the changes in the position of the limbs long before there is any definite symptom of injury to the foot ; this, though a new idea to me, appears extremely true. Horses with bent knees and defective gait, when shod with these shoes, recover the straightness and strength of their limbs ; why is this ? It is because they lose the pain in their feet which was the cause of the evils mentioned. When Mr. Sheather first tried this shoe he did not anticipate anything approaching the good results he has obtained.

Mr. SHEATHER : Certainly I did not ; my chief expectation was to remedy and prevent corns.

Mr. HUNTING : The elastic nature of the leather at the heel of the shoe is a good point, and there is a useful pressure upon the frog ; functional activity at the posterior part of the foot is encouraged, and corns and lameness prevented. Another advantage, which will be valued in these days of wood and asphalte-paved streets, is that this shoe gives the horse a firm foothold on a smooth or slippery surface. It may be that at some time some of you will have a brilliant idea which will enable you to supersede this patent with something simpler, but at the present time there is nothing easier in application nor more durable than the shoe before us.

Mr. DUDGEON said he could endorse all Mr. Sheather had said regarding the benefit derived from the use of the shoe ; he had tried three pairs on a very bent-legged horse, each pair lasted a month while the horse was doing daily work amounting to ninety-eight miles a week, and at the end of the

three months there was a very great improvement in the position of the horse's legs. He had found that farriers could put the shoes on quite as quickly as they could ordinary ones.

Mr. Sheather showed various photographs illustrating his remarks. One represented a horse with very bent knees, and was taken before he had commenced wearing the patent shoes. From a second photograph taken after a two months' trial of the shoes it was evidently seen that straightness of legs had been restored.

Professor PRITCHARD said he had no practical knowledge of the usefulness of the shoe, but that it appeared to be a very reasonable invention. He considered that the Society was indebted to Mr. Sheather for laying the matter before them, and that a vote of thanks should be accorded him.

Mr. BROAD, in seconding the proposition, said he would add that the Fellows present were thoroughly impressed with the practical merits of the shoe, and recognised its usefulness.

The thanks of the meeting were unanimously accorded, and Mr. Sheather replied.

ALFRED BROAD, *Secretary.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE spring quarterly meeting was held at the Queen's Hotel, Leeds, on Tuesday, the 28th of April; the President (Mr. J. E. Scriven) in the chair.

The SECRETARY read a letter that he had received from the Hon. Sec. of the Royal Counties Veterinary Medical Association, respecting the rescinding of Clause IX. in the Supplementary Charter; after some discussion it was resolved to consider the matter at the July meeting.

Mr. TOOP complained of some articles on Veterinary Medicine and Surgery from the pens of the Messrs. Gresswell, now being published in the *Yorkshire Post*, and was of opinion that this procedure was entirely unprofessional, and calculated to promote quackery, and injure the veterinary surgeon in his daily practice.

After some discussion, it was resolved "That the President, Secretary, and Mr. Greaves indite a letter to the Messrs. Gresswell, expressing the disapprobation of the members of this Society with their unprofessional conduct."

Mr. TOOP read an able and interesting paper upon "Rheumatism." A practical discussion ensued, in which Messrs. J. S. Carter, Greaves, Fletcher, Axe, Peter Walker, Bowman, P. Carter, Broughton, and the essayist joined.

Mr. SMITH moved, and Mr. P. CARTER seconded, a vote of thanks to Mr. Toop. Carried unanimously.

Mr. FLETCHER kindly promised to read a paper at the July meeting upon "The Diseases of Swine."

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE eighty-third quarterly meeting of this association was held in the Medical Institute, Hope Street, Liverpool, on Friday, the 8th May, 1885. In the absence of the President, J. W. T. Moore, Esq., Mr. Edwards, Vice-President, took the chair.

Messrs. Locke (Manchester), and Davies (Bootle), were elected members of this association.

The SECRETARY read a letter received from the Royal Counties Veterinary Medical Association, respecting the rescinding of Clause 9 of the Supplementary Charter.

Mr. HURNDALL, of Liverpool, in a very able speech, proposed the following resolution, which was seconded by Mr. STORRER, of Chester, viz.:—"That whereas the time is approaching when Clause 9 of the Supplementary Charter, granted by Her Majesty the Queen on the 23rd August, 1876, will

come into operation and effect, this meeting is of opinion that the present is a suitable opportunity to pronounce against the said clause standing upon the said Charter of 1876 any longer, inasmuch as the majority of the members of this association are of opinion that to restrict the election of representatives to serve on the Council Board to those practitioners who hold the Fellowship degree is calculated to deprive the profession of much valuable counsel, to inflict an injustice upon a very large majority of the members, and to place too much power regarding the politics of the profession in the hands of a limited representation ; and that the President and Members of Council be requested to take the necessary steps to have the said clause rescinded at their next meeting, or at the first opportunity, so long as it takes place before the said clause can come into operation."

A warm discussion afterwards took place, Messrs. Thomas Greaves (who read a letter from Dr. Fleming on the subject), Peter Taylor, W. A. Taylor, Thomas Briggs, Whittle, Woods, and George Morgan, all speaking strongly against the rescinding of the said clause. When put to the meeting, the resolution was lost by an overwhelming majority.

Messrs. E. Faulkner and A. Leather exhibited a number of improved veterinary instruments, viz., probang, trephine, tooth-rasp, trocar and cannula, aspirator, écraseur, etc.

Mr. H. SUMNER then read a short paper on the "Action of Purgatives." On account of the late hour of the evening, the discussion was postponed until the next meeting.

THE ACTION OF PURGATIVES.

Mr. President and Gentlemen,—I will preface my remarks upon the "Action of Purgatives," by a reference to the action of medicines generally. As this is a great and important subject, my reference to it will be necessarily short and incomplete.

The great majority of medicines must enter the blood or internal fluids of the body before their action can be manifested.

The mere contact of a medicine with the stomach is not usually sufficient for the production of its peculiar action upon the system, exception being taken to those medicines given with a view of promoting some topical action upon the membrane with which they come in contact.

The entry by the internal fluids may be demonstrated by the topical application of such remedial agents as chloroform, belladonna, etc. When such an agent is rubbed upon the skin, as soon as it has penetrated the cuticle it paralyses the superficial sentient nerves, which are bathed in the interstitial fluids of tissues directly containing the agent employed. Thus it is easy to act upon them without passage through the blood, and if the application is considerable it may be taken into the blood and produce its peculiar action upon distant organs.

This mode is most useful when such parts of the structures of the eye as are not directly supplied by blood are desired to be acted upon.

Medicine, when exhibited, can only by absorption obtain entry into the blood, except when it is directly injected into the blood-stream.

Does a medicine act by mere contact with the stomach, its influence being transmitted to distant parts by nerves, or does it pass into the system acting through the blood and fluids ?

Without entering into the many arguments upon this question, I may mention a few experiments and facts.

Magendie and others found, from carefully-conducted experiments, that nervous continuity was not necessary for the actions of medicines, but that vascular connection was.

Also that medicines introduced directly into the blood-stream act in the same manner as when given *per oram.*

The circulation is sufficiently quick to account even for the operation of those poisons which act rapidly, by influencing the nerve centres; such agents as prussic acid and ammonia are so rapid in their action, that we might easily suppose it was due to nerve-transmission.

The observations and experiments of Dr. Blake and others, upon the length of time occupied in the completion of the round of circulation, are such as to account for the speedy action.

He found the round of a dog's circulation was completed in 9 secs., and that of a horse in 20 secs.

Various theories have been propounded as to the absorption of medicines, but only that of endosmosis we will briefly consider.

Pouisenille found that serum would pass through an animal membrane to a solution of sulphate of soda of greater specific gravity than itself, and upon this fact he based his theory.

It was "that an ordinary saline purge, of greater density than serum (1·028), acted by causing serum to pass into the intestine in quantity greater than ordinary, producing watery evacuations." It was supported by Liebig, Millon, and others. They said that when a saline is absorbed it causes diuresis, and when it is not absorbed causes purgation; differing in its action according to the amount of dilution, being largely diluted when diuresis was desired. But the kidneys will not eliminate more than a certain quantity of a salt, and according to the amount of fluid given, so will the amount of diuresis depend, and not upon the amount of the salt administered. Purging is essential to rid the system of an abundance of that which is not a constituent of the blood, and which cannot be eliminated by the other emunctories. Analogy is against this theory; other purgatives from the vegetable kingdom, when injected into the blood, are productive of watery evacuations. What effect on process of endosmosis can be exerted by oleaginous purgatives or by magnesia? It was laid down by Boerhaave that pressure was necessary for absorption of chyle; and if this theory of the endosmotic action is correct, for this pressure there is no need; and even supposing the fluid of greater density than serum, being in the canal it must become diluted, and then would pass through.

Again, in the secretions of the body the specific gravity of the urine, bile, etc., is above that of serum, and if endosmosis was essential in one, how is it that they are not diluted to the common specific gravity before excretion?

Seidlitz and sea-water are both of lower specific gravity than serum, and they are purgatives. I trust what I have dwelt upon will suffice to confirm us in the opinion that medicines are taken into the blood or internal fluids, before they can produce their specific action upon the various organs of the body.

Before at once considering the action of purgatives, I will glance at the class to which they belong, viz., eliminatives. This class of medicines act by passing out of the blood by various and special glands, which they excite to increased secretion.

There is one general law of secretion, which should be clearly understood, viz., That it is the especial office of each gland, or set of glands, to secrete from the blood particular matters, and to pass them out of the system; some of such secretions are again used in various parts of the body.

The power of this ability is attributed to the selective cells of the glands. The glands afford the only means whereby a substance can make its exit from the blood.

This selective secretion applies not only to the normal constituents of blood, but to those which, by accident or man's design, are introduced into the system, and which, being foreign, must be excreted. Eliminatives are medicines which pass into the blood. They cannot remain there, and must

pass out. They pass out by some glands more than by others; and in so doing they excite the gland to increased secretion.

Their use is indicated when the function of a gland requires restoration or promotion.

With this short reference, I shall now pass to the subject proper of my paper—the action of that class of eliminatives which are termed purgatives, cathartics, evacuants, etc.

Purgatives, like most medicines, are chiefly absorbed in the small intestine; they excite watery evacuations with increased frequency, by increasing the secretion of the glands of posterior intestine.

From the presence of the astonishingly large number of glands in the posterior intestine, especially those of Lieberkuhn, this portion of the tract is especially destined for copious secretion.

In severe cases an outpouring of blood also occurs (the fluid portion containing altered albumen, albuminose).

Purgatives may be divided into the indirect and direct.

The former division simply acts by irritating the membrane, causing excessive secretion and peristalsis; the latter produced by reflex nervous action—such materials as the husks of seeds, straw, and other coarse indigestible fibre, in large quantities.

An intermediate class of medicines act both by absorption and irritation. Amongst these may be mentioned gamboge, aloes, and scammony, which are in their action true eliminatives. Some purges act by irritating the muscular fibres; others do not act except they enter the blood-vessels and are mixed with the mass of blood.

Direct, or true, purgatives are medicines which, at whatever part of the system they gain entrance, their action is uniform, and also they are received into the blood, and are true eliminatives.

Intravenous injection, absorption through the skin, or from the mucous membrane of the respiratory tract, where the finely-powdered drug may drift, is uniform. They are eliminated by the glands of posterior intestine.

When medicines of this class are given *per oram*, they are chiefly absorbed in the small intestine, and elimination occurs as in the others where the drug is not at once placed in the alimentary canal (the glands of posterior intestine). True purgatives not only clear the intestinal tract of its contents, but they also purge the blood.

We may divide purgatives into three groups—viz., mercurials, oils and acrid principles, and salines.

Mercurials tend to increase all the secretions, and are pre-eminently cholagogues, and should be given in conjunction with another purge to clear them out of the system where they are prone to accumulate.

Resins, etc., include most of our range of purgatives; they are rendered soluble by the alkaline secretions.

I may here mention that many of our drugs (and especially is it the case with aloes) are more potent in their resinous state than are their active principles or alkaloids; probably the resins have some important part to play in the production of purgation.

Aloes acts more especially upon the posterior intestine; hence great care should be used in its exhibition to pregnant animals.

Dr. Hamilton, in his work upon purgatives, expresses his opinion that aloes and rhubarb, given continuously, lose their potency upon the subject, owing to a bitter and astringent matter along with the purgative principle.

Such is not the case with castor oil, jalap, and scammony.

Of the oils, three are common in our practice—viz., linseed, castor, and croton. The first-named is the more generally used; it is a mild and a safe purgative, gentle in its action, and seldom attended with untoward results.

Castor oil and that of croton are chiefly used in ruminating animals; they are both more drastic than linseed. I think I need not dwell upon the use of croton as a purgative; it is most drastic, and, I think, only applicable in cases of impaction in cattle.

The salts of the alkaline and earthy metals are all more or less purgative, differing in properties, and depending upon the amount administered.

In small doses they may be excreted by the kidneys; in larger doses they cause purgation; some small amount may pass off through the glands of the skin.

In an ordinary state, the secretion of the skin is not perceptibly increased, although in many disorders of the skin a very salutary effect is produced by the action of mild purgatives. Salines are hydragogues; hence they require much water for the required action; and in excessive elimination the altered albumen of blood may also pass out, as previously mentioned. When vegetable salts are given in small doses, they are formed into carbonates, and so act upon kidneys.

The various purgative agents pass out of the system with the excessive secretion to which they give rise. The metallic salts are readily identified; the resins of aloes, rhubarb, etc., have all been clearly shown to be present in the evacuations.

Buchleium prevented the operation of saline purgatives by the joint administration of tannic acid and morphia.

When a purgative fails to act, other glands have to take upon themselves an extra share.

The kidneys being the great water emunctories do a large share. Animals disposed to profuse sweating are difficult to purge. Dr. Ward records a case of a woman who, after receiving a dose of castor oil, her skin excreted the oil, the bowels remaining unaffected. Purgation is complementary to the other secretions. When sweat and urine are parted with in large quantities, purgation is not profuse; in the opposite conditions it is copious.

In some cases of renal disease, as in "Bright's," the diarrhœa which often accompanies it proves that the intestines are endeavouring to overcome the deficiency of the kidneys, and so clear the blood of much effete material. A case of a boy is recorded who lived seventeen years, never having passed urine; diarrhœa was, however, always present (Dr. Richardson, "Physiological Transactions," vol. xxviii.). In some plethoric animals, where there is a redundancy of blood, it is difficult to produce purgation, and the use of sedatives in conjunction with the purgative is suggested, it having been followed by the desired results.

The ultimate action of purgatives is to reduce the volume of blood, thereby favouring absorption, excite the bowels to their proper function, and to clear the alimentary tract of irritating material. As to the comparative uses of this valuable class of medicines in the practice of the medical profession and in our own, I may say that they are more generally used in the former practice; and, as an instance in that practice, I may mention that, in the initial stages of fever, the treatment is to clear the intestinal tract.

Purgation is somewhat easily controlled in man, but in the lower animals such is not the case; and it is from this fact, I think, that we so sparingly use them in similar cases. More especially is spontaneous purgation accompanying fever in the horse difficult to combat.

In cattle, purgation is not so excessive, and is certainly not attended with such serious consequences.

I will not further detain you with the effects of purgation.

I may, however, add that purgatives lower the vital forces, producing more or less nausea, according to the amount of the drug administered, the effect produced, and the temperament of the animal. I will not here treat of the

advisable precautions in the administration of purgatives, the preparation of the subjects for their reception, and the treatment of those untoward and unsatisfactory consequences which there is no doubt it has fallen to the lot of most of us to encounter. I regret time will not allow me to consider more fully this important subject, and I sincerely thank you for your kind attention.

A vote of thanks was proposed by Mr. GREAVES, and seconded by Mr. MORGAN, to Messrs. Faulkner and Leather for their interesting exhibitions, and also to Mr. Sumner for his instructive paper. Carried unanimously.

The usual vote of thanks to the Chairman terminated a very interesting meeting.

EDWARD KITCHIN, *Hon. Sec.*

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE usual quarterly meeting of this Society was held in the London Hotel, Edinburgh, on Wednesday, May 20th, the President, Professor Williams, in the chair.

Professor WILLIAMS said he desired to retract the statement, which he had made in his inaugural address that Professor Robertson had voted against the resolution appointing four additional examiners to the "C" board. He regretted having made the mistake, and wished the retraction to be entered in the minutes of the meeting.

Some of the members being of opinion that two o'clock is an inconvenient hour for the meeting to commence, it was suggested by the chairman that the hour should be altered. The subject was discussed by Messrs. Rutherford, Cameron, Hutton, Burnett, and others, and Mr. Cameron gave notice that at the next meeting he should propose that the hour be changed.

The SECRETARY then read a letter from the Royal Counties Veterinary Medical Association, requesting the members of the Scottish Metropolitan Society to co-operate with them for the purpose of getting Clause IX. of the supplementary charter of 1876 rescinded. After the subject had been well discussed, the secretary moved—"That it is the opinion of this Society that it is not expedient to have Clause IX. rescinded."

Professor W. O. WILLIAMS seconded the motion.

As an amendment Mr. RUTHERFORD proposed—"That this Society hereby petitions the Council of the R.C.V.S. to reconsider, with a view to their modification, those clauses of the supplementary charter relating to the admission and privileges of the Fellows."

The amendment, seconded by Mr. FINLAY DUN, was carried.

Mr. RUTHERFORD then gave a very interesting description of four cases of Tetanus following severe burning, and a case of heart disease attended with lymphangitis. The cases were discussed by Professors Williams, Walley, Baird, and others.

Professor WALLEY exhibited the following specimens—Intestines showing the ulceration of Swine Fever; Anchylosis of the occipito-altoid articulation, resulting from Poll-evil; Tumours from intestine of fowl affected with gregarinosis.

Mr. CUNNINGHAM, of Slateford, exhibited three large intestinal calculi.

Professor WALLEY gave notice that at the next meeting he would propose that Mr. Bartley be elected a member of the Society.

The meeting terminated with the usual votes of thanks.

T. HERBERT LEWIS, *Hon. Sec.*

ONTARIO VETERINARY COLLEGE.

WE have received the report of the Examinations and presentation of prizes of this school in Upper Canada, from which it appears that the past session has been the most successful since its establishment, there being students from all parts of the United States and Dominion of Canada. The prize list was read by Professor DUNCAN, and the prizes were presented by the Lieutenant-Governor, Professor Goldwin Smith, etc.

The Principal, Professor Smith, presided.

The LIEUTENANT-GOVERNOR made a few remarks after the presentation of prizes. He said he was present two years ago at the presentation of prizes, when he had listened to a most excellent account of this institution, and of the success with which it had met. He was glad to be present on this occasion and hear a still more flattering report of the progress of the College. He complimented Dr. Smith very highly on the reputation which the College had attained, as was shown by the number of students from abroad who attended it. Colonel Gzowski also spoke in flattering terms of the progress made by the College, and the work it had accomplished in the interests of the profession.

MONTREAL VETERINARY COLLEGE.

THE examinations of this College took place at the end of March, when the names of those who had successfully passed, as well as the prize-takers, were announced.

Mr. LESSAGE, after the distribution of the diplomas and prizes, addressed the meeting. He said that he had been sent specially by the Government to express their high appreciation of the Veterinary College, which was a credit to the province, and for himself he must express the great pleasure he experienced in being present to-day. He dwelt at some length on the value of the stock and dairy industries of the country, and the immense importance of such a profession and such a school as this to deal with those contagious diseases of animals to which they were liable, and concluded an eloquent address by congratulating those who had obtained their diplomas, and wished them every success in the profession they had embraced.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

Variola and the Varioloid Diseases of Animals.

AT a meeting of the Society on the 13th May,

Dr. E. F. WILLOUGHBY read a paper on Variola and the Varioloid Diseases of Animals. He said that a number of animals—as the sheep, goat, camel, swine, and, according to some, the dog—are subject to diseases resembling in all their phenomena that known as Small-pox in man, and which may therefore be called Variola Humana, Ovina, Caprina, Camelina, etc. They are all highly infectious to animals of the particular species to which they belong, attended by high fever, a general vesicular or pustular eruption, and great danger to life; not communicable to animals of other species except by direct inoculation, and then producing a local affection only, with little constitutional disturbance and no danger to life. One attack, however induced, confers immunity against the particular disease; but they are not mutually protective. Horse-pox and Cow-pox differ in several essential features from the foregoing; they are purely local affections, unattended by much fever or any danger, are not infectious, but, though said to appear spontaneously in rare instances, are communicable only by inoculation, when they confer immunity not only against subsequent inoculations, but also

against the infection or inoculation of human Small-pox. Though experiment shows that they can be inoculated on any part of the body of horses and cattle of either sex and of any age, the so-called spontaneous cases are always seen to occur on the heels of horses, the udders of milk-cows, and the lips of sucking calves. On these facts two opposed theories have been built: one, which may be called the French doctrine, though accepted by Böllinger in Germany and Fleming in this country, is that there are two orders of Variolæ, in one of which the virus is, as Fleming expresses it, "volatile," and in the other "fixed." In other words, while inoculation with Small-pox protects man against Small-pox, and inoculation with Sheep-pox protects the sheep against Sheep-pox, though Small-pox does not protect against Sheep-pox, nor Sheep-pox against Small-pox, yet Cow-pox and Horse-pox confer immunity not only against one another, but against a totally unlike disease—namely, Small-pox. The other, and certainly the correct, view, held by the best authorities in England and Germany, except those above mentioned and by Dr. Warlomont, is that while the Variolæ proper are so many distinct specific diseases, peculiar to the respective animals, though capable of being communicated in a modified form to others by direct inoculation, Cow-pox and Horse-pox are not independent diseases, but merely instances of the cultivation of human Small-pox in the organism of another animal. Since "vaccination" has been proposed as a prophylactic measure against Sheep-pox, and other suggestions of a like kind have been made from ignorance of the true relations of these diseases, it is of the highest importance that the law of immunity should be clearly understood. It may be expressed in four theses: 1. One attack of Variola of the kind proper to any animal protects the individual against subsequent infection or inoculation with the same. 2. Inoculation of any animal with the virus of its own Variola produces a milder form of the same disease, but affords a protection similar to that conferred by an attack acquired by ordinary infection 3. Any Variola inoculated in an animal other than that whose Variola it is, gives rise to a peculiarly modified form of the disease, attended by little constitutional disturbance, merely local congestion, and no danger to life; such modified disease being no longer communicable to any other animal of the same or of different species except by direct inoculation. 4. This modified disease affords a considerable degree of immunity against infection by any means whatever with the Variola whence it was derived, either to the animal whose Variola was the original source of it, or to others capable of being infected in any way thereby.—In the discussion which followed, the President, Drs. Renner, Pringle, Gordon, C.B., Murray, and Mr. Shirley Murphy took part.

PATHOLOGICAL SOCIETY OF LONDON.

At the meeting of this Society, held on February 17th, Mr. J. BLAND SUTTON made an elaborate communication on

Pulmonary Diseases in Wild Animals,

In which he gave a general account of the zoological distribution of certain forms of Lung Disease among wild animals dying in the Zoological Society's Gardens during the past three or four years. The opinion held by the medical profession and the world at large, that wild animals in captivity died from Pulmonary Tuberculosis, lacked foundation, and was certainly erroneous. The conclusions drawn were founded on the following series of cases. From October, 1881, to December 31st, 1884, the total number of deaths was 2,779, made up of 583 mammals, 1,408 birds, and 788 reptiles. Of the 583 mammals, there were 303 quadrumana, including 7 anthropomorphous apes. Of these

mammals, 5 died from Pulmonary Tuberculosis—namely, a tree-porcupine, eyre, kinkajou, lagotis, and an agouti ; only one case of General Tuberculosis was seen, and that was in a coatimondi. It was remarkable that all these tuberculous animals came from South America and the tropical portions of North America, a region named by zoologists the "neo-tropical region." It differed from all the great zoological divisions of the earth's surface by the almos unequalled extent and luxuriance of its forests, its delightful climate, and the richness and variety of its animal life. It was also the home of the guinea-pig. Pneumonic Phthisis had been seen in 12 cases, of which 5 were monkeys, and the rest carnivora. Even if these cases, by the utmost elasticity of the term Tubercle, were included, Tuberculosis was a very unfrequent cause of death in wild animals. The lungs, in many of the cases of Tubercle, were examined by Dr. Heneage Gibbes for bacilli, and he found them present, not in thousands merely, but in millions. Dr. Gibbes had worked out some very important facts in connection with these micro-organisms ; but this part of the research was left entirely in his hands, and the results would be published in a separate paper. Since mammals in confinement did not die from Tuberculosis, it became necessary to give an account of their fatal diseases. It might be broadly stated that each group of animals had certain forms of chest affections common to the group. Thus, primates, excluding man, suffered from Bronchitis, Atelectasis, and Lobular Pneumonia. Carnivora were exceedingly liable to Double Pleurisy, Lobar Pneumonia, and Bronchitis ; whilst ruminantia had the peculiar disease known as Perlsucht (the so-called Bovine Tuberculosis), Bronchitis, and Worm-bronchitis. It would be seen that Bronchitis, zoologically speaking, was widely diffused ; and this was to be accounted for by the vicissitudes of the English climate, in contrast to the tropical climate to which many of these animals were accustomed. Although birds had been excluded from this report, so far as Tuberculosis was concerned, yet there was one pathological condition peculiar to them which was of great interest. It was well known that in birds the bronchia were in communication with a series of membranous cavities known as air-sacs. It happened, with especial frequency in water-fowl, that the lining membrane of these sacs inflamed, giving rise to exudation. This inflammatory matter coagulated, and often formed a covering half an inch in thickness, which formed an excellent nidus wherein the mould, penicillium, might luxuriate and form a thin layer throughout the entire series of these air-chambers. Hunter, Owen, Müller, Robin, and others, had noted the presence of mould in the air-sacs of birds, but they all seemed to have overlooked the exudation. The interest of this condition lay in the fact that this mould did not confine itself to the air-sacs, but even permeated the intercapillary air-sacs of the bird's lung, which corresponded to the alveoli of the mammalian lung. In view of these facts, was it a matter for wonder that, in the human lung, vegetable organisms, a fraction of the size of the spores of penicillium, requiring similar conditions for existence, occurred, such as were recognised under the name of bacilli? It was impossible to narrate all the details of the numerous cases of pulmonary affections which were to be observed. The "field of work" such an inquiry opened up to those who had the leisure and opportunity was immense.

Dr. CARRINGTON thought that before any conclusions could be safely drawn from the classification adopted of tubercular and other diseases, more details of a clinical kind were wanted.

A conversation ensued, and Mr. SUTTON'S replies to the various questions put to him may be summarised as follows. He had used the presence of Tubercle bacilli as the test to discriminate cases of Tubercle and Phthisis from those of Pneumonia in doubtful cases. In 303 quadrumana, the proportion of deaths from pulmonary disease alone was about 30 per cent. He

considered Bovine Tuberculosis to be a distinct disease from Human Tuberculosis, its lesions and ultimate effects being very different from those seen in man. Dr. Klein had shown that the bacilli in the bovine form differed, not only morphologically, but in their distribution, from the Tubercle bacilli of Koch. Dr. Heneage Gibbes inclined to the same view. "Worm"-bronchitis was a recognised affection in animals, frequently seen in young calves; it had obtained the name of "Hoose" Disease. It was caused by an immature worm, a "strongyle," getting into the trachea, and ultimately finding its way into the pulmonary alveoli. It caused often distinct bulgings of the pleura, which felt like small knots, and was now and then mistaken for Tubercle. Up to the present time, the bacilli had been found to occur with greatest frequency in cases of Pneumonic Phthisis. When the paper was published in the *Transactions* of the Society, full statistics of the pulmonary diseases would be appended. All the conclusions set forth in the paper had been drawn with great care, and if there were any error in discriminating between the cases, too many had been classed tuberculous rather than the reverse.

At the meeting on April 7th, Dr. NORMAN MOORE showed a specimen of Tuberculosis of the kidneys of the ox with bacilli. The kidneys were much enlarged, and one completely changed into a great white mass, with hardly any remains of kidney structure except the external lobulation. One lobe of the other kidney had undergone a similar complete change, and elsewhere it showed numerous white nodules. These, as well as the completely changed kidney, showed abundant groups of bacilli, and the bacilli themselves agreed in form, method of staining, and size with the bacilli of tubercle in man. The tuberculous part of the kidneys was nowhere broken down, but showed many zones of more or less complete calcification. The morbid change corresponded to the description of "Perlsucht," and the abundance of bacilli present confirmed the opinion that that disease was a true variety of Tuberculosis, and not a lympho-sarcomatosis, as it was once believed to be.

Dr. DICKINSON gave an account of an epizoöty of Renal Disease in oxen, which had happened on the farm of a gentleman, an experimental farmer. The epidemic of "red-water" broke out in a herd of shorthorn oxen, and affected at least half the number with almost uniformly fatal result. The urine was loaded with blood, and there were casts of enormous size; turpentine was used as a remedial agent. He had examined the kidney of an ox which had survived the attack of Renal Disease six months. The kidney was in a typical state of interstitial nephritis. One kidney was more affected than the other; they were granular on the surface. The cause of the epidemic is unexplained. Some said it was the use of poor after rich pastures; others said it was digitalis; possibly the ingestion of "bracken" might account for the disease.

Actinomycosis and Typhoid Fever in Monkeys.

At the meeting on May 5th, Mr. SHATTOCK showed two specimens of Actinomycosis of the Liver, which he had found in the museum at St. Thomas's Hospital. There was no doubt about the presence of the fungus, and sections were placed under the microscope. With one of the specimens there was a history. The specimen came from a girl aged fifteen, who was believed to have died from "scrofulous" disease, which affected chiefly the ovaries and Fallopian tubes.

Mr. BLAND SUTTON read a paper on Tyhoid Fever in Monkeys. Dr. Budd and Professor Axe considered that the typhoid fever, purple or red-soldier, was the same disease as typhoid fever in man, but Dr. Klein had

found that there was nothing in common with the disease in man. Mr. Sutton had reported some cases of Typhoid Fever which occurred in lemurs living in the monkey-house of the Zoological Gardens. Payer stated that in 1839 M. Serres reported an outbreak of Typhoid Fever among the monkeys in the menagerie attached to the Museum of Natural History, Paris. The symptoms were diarrhœa, increased frequency of the pulse, and fever, ending almost always in death. In January of the present year there arrived at the Zoological Gardens six Canadian beavers apparently in the best of health. In the course of four or five weeks after their arrival four out of the six animals died, and the remaining two were sent away and recovered. The younger ones were the first to succumb, but in all ulcerated Peyer's patches were found, both in the agminate and solitary forms; the ulcers were typical of the disease. In the young specimens the various stages could be seen from the normal Peyerian patches through the infiltration and sloughing stages, with the bile-stained débris still hanging to some of them. Small whitish specks could be seen in the liver of two beavers; these were due to disintegration of minute areas of the hepatic tissue. Despite the negative results of inoculation, Mr. Sutton thought his cases proved that Typhoid Fever could occur in monkeys.

ACADEMY OF MEDICINE IN IRELAND.

AT the meeting held on February 13th, Mr. ABRAHAM read a paper on

Self-Mutilation of a Lioness

twelve years old, in the Dublin Zoological Gardens. The animal was discovered one morning to have eaten off six inches of her tail. After a short time she took off another large piece, and, finally, in another meal, demolished the remainder. After another interval she began to eat the dorsum of one of her paws. It was thought advisable to destroy her—various means, change of diet, aperients, local applications, etc., having failed in stopping the perverted appetite. She had till then been quite healthy, in good condition, and nothing amiss with the fur or excretions, but for one year previously she had not been in season, although formerly her catamenial periods were regular, and she had given birth to four litters of cubs. At the *post-mortem* examination all the internal organs were found healthy, with the exception of some ovarian degeneration. A number of similar cases were cited, and the distinction pointed out between those in which an animal suddenly begins to bite off and swallow large portions of its person and the more common cases, as in monkeys, etc., in which a gradual nibbling away of the tail takes place, often in consequence of some external irritation, or the itching of a healing wound.

The PRESIDENT suggested that the affection was analogous to the tendency in human beings to bite their nails, which sometimes occasioned the destruction of the ultimate phalanges of the fingers. The nail-biting began generally before hysteria manifested itself. Possibly, the lioness sought to relieve itself from irritation, and there might be an anæsthetic condition of the tail and foot which enabled it to do so without much pain.

Mr. COLLINS remembered seeing a lion or lioness similarly affected. In 1871, a horse was under his observation which, though quiet during the day, kicked furiously at night, and ultimately bit the skin off his chest. A light having been placed in the horse-box, and a man directed to watch, there was no disturbance, and he attributed the animal's action to terror. He knew of spaniels gnawing their tails when sore. Monkeys in confinement mutilated themselves, biting their tails.

Mr. WHEELER had a spaniel bitch which had had several litters of pups, and ate the last litter, then her own tail, and died of convulsions.

Dr. HENRY KENNEDY instanced a child suffering from hydrocephalus, who ate off the whole of the under lip.

The Rev. Dr. HAUGHTON said the President had made a good point in comparing the tendency described in the lioness to that of biting the nails in human beings. The nail-biting habit was, in his experience, confined to men. There was a great deal in Mr. Abraham's remarks as to the hysterical character of the affection. During the twenty-one years of his secretaryship to the Zoological Gardens, he found it necessary to drown animals that bit their tails. The tendency was connected with that in female animals of destroying their offspring. The feline carnivores ate their surplus cubs, but dogs had been known to bury them alive. The question that, when the breeding period was over, there was a liability to permanent derangement or loss of faculty, was a very serious one. He had seen cases of women who, having stopped breeding, either took to drink or became deranged. Self-mutilation was so foreign to animal instinct, that it must be due to interference with, or cessation of, some great physiological function.

Mr. KNOX DENHAM mentioned the case of a cat which devoured its four kittens, and afterwards suckled three young rats, which became domesticated, running about the house. The children played with them, but the lady of the house, becoming alarmed, had the rats destroyed.

Pericarditis in a Horse.

Mr. ABRAHAM read a paper for Dr. NIXON on Pericarditis in a horse, showing the specimen. The principal features were enormous hypertrophy, and an extraordinarily extensive fibrinous exudation covering the whole pericardial surface. The normal weight of the horse's heart was six or seven pounds, but this specimen weighed twenty-one pounds. The notes of the case were taken by Mr. J. Kenny, under whose care the horse had been for Pleuro-pneumonia, which had yielded to treatment. A week after, the animal was brought back, with high pulse and friction-sounds over the heart, subsequently becoming dull. At the *post-mortem* examination, four gallons of yellow fluid were obtained from the pericardium. The hypertrophy of the heart was of long standing, and caused chiefly by the heavy work which the animal had to perform. The Pericarditis appeared to be secondary to the Pleuro-pneumonia. The immediate cause of death was the enormous per cardial effusion.

PROCEEDINGS OF THE SECOND GENERAL MEETING OF THE NATIONAL VETERINARY ASSOCIATION.

(Continued from page 382, vol. xx.)

Mr. T. H. SIMCOCKS: The medical profession contains some very eminent men in its ranks, but it has others who are by no means noted for their ability. In fact, I think that I may say that the average medical man is remarkable for his entire ignorance with regard to animal diseases. I came here to be instructed, but so far as the discussion has gone I have not been assisted in arriving at any definite conclusions. Professor Walley asserts that if meat sets well it is fit to eat. Professor Williams states exactly the contrary. Dr. Fleming says that if the internal organs are any indication, certain meat he alluded to should not have been used. I should like to ask him how can the use of the flesh of an animal which has died of Pleuro-pneumonia be justified? Dr. Fleming, in his very able work, points out that this flesh is innocuous, and says that it is used in France. That is a question which, I think, you cannot argue from the state of the internal organs. I think that in some diseases it is doubtful whether we can say with certainty that meat is

fit for food or not. It would, I think, be a mistake to assert that every animal which has died of disease should be buried. The meat may not be of so high a quality as a well-finished fat beast, but the class of persons who purchase it are those with small means, and unless they bought this they could buy none at all. I think that sentiment and prejudice have too much to do with this matter. I should like to mention a case where an animal suffering from apoplexy was slaughtered. The medical officer was asked why he condemned the meat. He said that he had found in the udder signs of advanced Milk Fever. If such persons as these are to be held up as "shining lights," I think that the veterinary profession must have fallen to a very low ebb. Let us look after ourselves, and let the medical profession do the same for themselves. We should treat them as they treat us. What we want is a central authority, free from local influence, which will be guided by the dictates of reason and by a desire to promote the public health.

Mr. H. OLVER: I had no intention of addressing you upon this subject, but it appears to me that we are getting rather wide of the mark. The subject we have to discuss is that of the transmissibility of disease from man to animals and from animals to man. It seems to me that medical men are sinned against, as well as sinning. To the best of their ability, I believe, they carry out their duties, although they do not, as a rule, know when flesh is diseased and when it is healthy. As far as I am concerned, medical officers and sanitary inspectors have always consulted me. I entirely agree with what Mr. Edgar has said as to the inspection of dairies. I have annually inspected 200. I make it a rule only to ask for a good open cow-shed, properly drained. A client of mine told me that a policeman had condemned his cow-shed because there were great holes in the roof: the very thing that was wanted. The police are not the men for this duty. As to the inspection of markets and fairs, in the majority of cases it is not carried out at all. As to the subject of diseased meat, I must agree with Professor Williams, that Professor Walley has put forth a dangerous idea in what he says about the tongue. You may admit that ingestion of the flesh has no ill effect; still it is a dangerous experiment. The line must be drawn somewhere, and I think this should be at the spot where the parts are actually diseased. I have no connection with medical men, but I think that we might help each other to a very great extent.

Mr. T. HOPKIN: There are some broad facts upon which we all agree; one is, that certain of the diseases of the lower animals are transmissible to man. Our Government have taken certain measures to prevent this transmission. Have these been effectual? From my experience they have not, taking into consideration this sentence in Professor McCall's Paper, "Bovine Tuberculosis may be, and is sometimes transmitted to the human subject by eating the flesh and drinking the milk of tuberculous cattle." We have hundreds of these cattle badly affected. Then comes the question of other diseases, not easily detected but transmissible to man. Do the powers that be take the proper steps as regards these? I believe not. I believe that the microscope is called into use, but that the examination is very superficial. As these diseases cannot be detected without the use of the microscope and other aids, I want to see these brought more into use, and that by inspectors who shall appreciate fully the importance of the subject, and have—like those in Continental cities—the ability to detect these diseases and to give good advice about them. I can tell you that horseflesh is eaten by the ton within a very short distance of this room, and hundreds of animals affected with Tuberculosis are also turned into human food. It appears by Professor McCall's Paper that compensation was paid in a case of Tuberculosis. It is not so here.

Dr. FLEMING: In reply to Mr. Simcocks, I may state that the organs to

which I referred were those affected with "*Tuberculosis*" in a very advanced stage. We must deal with facts. Experimental pathology should be able to enlighten us. I do not know of a single case in which a human being has been inoculated with Pleuro-pneumonia. We know that butchers have dressed the meat for years and years, and that veterinary surgeons have performed *post-mortem* examinations—wounding the hands—but no fatal results have followed.

Mr. J. LAMBERT: I agree with Dr. Fleming that we should look at this subject from a practical point of view. Experimental pathology and experience agree pretty fairly that these diseases are due to bacteria of various forms. There are four classes of these, and one of them forms spores, which are very dangerous. The others are easily killed, and good cooking will get rid of them. Anthrax and Swine Fever both form spores. You can tell the spores, which, I may mention, are difficult to kill. Pleuro-pneumonia and diseases of that nature which are due to micrococci, are not so dangerous; their micrococci are easily killed. I think that there can be no doubt that the outbreak alluded to, as having taken place at Dover, was Foot-and-mouth Disease.

Mr. MOIR: Unless the inspection of dairies is made compulsory, it will be useless. If carried out thoroughly, it would be a great boon. I think the diarrhœa we find in children is often produced by milk obtained from a cow too soon after parturition.

Mr. BELL: As an inspector of meat in the north, I may say that *Tuberculosis* is one of the commonest diseases amongst cattle. Looking at the subject from an agriculturist's point of view, I would ask, is he to suffer by the medical officer ordering these animals to be destroyed? I think that we should take such measures to get rid of the disease as shall cripple the breeders as little as possible. Some of our finest herds are breeding this disease. I hope that Dr. Fleming will bring this disease before the Privy Council, and ask them to include it in the Contagious Diseases (Animals) Act.

Mr. WALKER: With respect to *Tuberculosis*, I have had a great deal of experience in one of the largest parishes in England, and I believe that a large portion of food consumed there is unfit for human food. I am afraid that if we had the Act altered, very few cases would come under it, as the disease makes great strides before it can be diagnosed. I think that Mr. Taylor gives rather too much credit to the sister profession. On one occasion I received a telegram from a doctor who was acting as inspector, asking me to go and see a young heifer. I found that the lung was growing to the side and they could not get it out, and the doctor in a case of this kind had to telegraph to me. A few weeks ago I attended a case at Halifax, and went to no less than ten doctors to see if I could borrow a book which would assist me to work out an idea of my own. Neither of these medical men appeared to have any idea of the physiological change which takes place previous to parturition. Still, I think that we should hold out the hand of fellowship to that profession. I think that if we depend upon our own, our support will be a slender one.

Professor MCCALL: I shall not detain you long. You have my views on the subject before you. Professor Walley asks me to explain why I say that the flesh of an animal which has suffered from Cysticercus cellulosus is not fit to be given to a dog. I hold that this flesh is not fit to be given to any animal uncooked. It is quite customary to say that this is good enough for a dog. He also says that he does not think that any man would mix diseased milk with healthy. I say that no man mixes it knowing that it will contaminate the rest; but they do it in ignorance. With regard to his further remarks, my practice is always to condemn the whole of the mucous

membrane where Foot-and-mouth Disease exists. He says that we need not condemn the head; but I think that he is wrong, because we have contagion in the salivary glands, which are so fixed upon the head that considerable portions of the latter would be removed in taking them away. I have always removed the whole of the alimentary tract. This disease may be transmitted, even if no eruption is perceived, the disease being present in the saliva. Mr. Edgar spoke of the water from the shale pits in the case I alluded to. Previous to the opening of these shale pits, Tuberculosis was unknown on the farm; but shortly afterwards the cattle commenced to cough. My reason for having the pipes laid down was that the animals should not drink the water. I am not prepared to say that bad water will produce the disease, but it will bring the body into that condition in which it is an easy prey to it. We know that the first symptom of Tuberculosis in the human subject is often a cough. This disease is not hereditary in the sense of being transmitted from the parent to the offspring. We are all breathing the organisms which produce it, but many of us are proof against it up to a certain point. Mr. Hopkins speaks of the compensation alluded to in the above-mentioned case. This, however, had nothing to do with the Contagious Diseases (Animals) Act.

The PRESIDENT: To leave the matter as it stands now would be to create confusion. To adopt Professor Walley's propositions will be to put the crowning point to the discussion. I will therefore call upon him to bring them forward.

Professor WALLEY: You know my opinions upon this subject. Some of my remarks have been a little misrepresented. I only spoke in a general way of the medical profession, amongst whose members I have several friends. I am perfectly willing to get assistance from that profession. With regard to what Dr. Fleming has said as to the flesh of animals which have died of Pleuro-pneumonia, I make no remarks. It is well known that this flesh has been eaten for years and years, and that no harm has resulted from it. An Australian gentleman, however, once told me of a stock-owner who had been inoculated from a beast, and in this case very serious results followed. The propositions I have to bring forward are these:—

1. *Has the time arrived when the veterinary profession should take more active steps to bring the meat question before the public and the Legislature?*

2. *Should all private slaughter be abolished in boroughs and cities?*

3. *Should cows and dairies be inspected periodically by veterinary surgeons, who should have the power to enforce the removal of any cow in the system of which evidence of dangerous disease exists?*

4. *Should all public markets and marts be periodically inspected by veterinary surgeons, and any animal there exposed showing evidence of dangerous disease be removed, and its carcase afterwards inspected?*

5. *Should the flesh of animals that have suffered from "Glanders," "Tuberculosis," "Septicæmia," or any disease likely to prove dangerous to the human subject be condemned?*

6. *Should inspectors of meat-markets be efficiently trained?*

These questions were all answered by the meeting unanimously in the affirmative.

Professor WALLEY then said: Is it your wish that copies of these resolutions should be forwarded by the President of this Association to the Lord President of the Privy Council and to the President of the Board of Health?

To this question also a decided answer in the affirmative was given.

MAJOR SUBJECT II.

ECZEMA CONTAGIOSA, OR FOOT-AND-MOUTH DISEASE.

BY WILLIAM WILLIAMS, F.R.C.V.S., F.R.S.E., PRINCIPAL OF THE NEW VETERINARY COLLEGE, EDINBURGH.

As I presume that all the members of this society are thoroughly familiar with the well-known symptoms of Foot-and-mouth Disease, I shall not waste their time nor weary their patience by a needless description of that part of the subject. There is, however, one point of the symptomatology of the disease to which I would wish to draw attention, namely, the absence in some cases of the principal diagnostic symptoms—the vesicular eruptions in the mouth and around the coronets. This peculiar feature is likely to prove misleading, and to cause errors of diagnosis, especially in fresh outbreaks of the disease.

In the last two importations from Ireland into Scotland many of the affected animals presented no other symptoms than those of lameness and elevation of temperature; but, notwithstanding the absence of the eruption, the disease was quite as contagious as if there had been a discharge from an eruption, and from this fact I conclude that not only is the virus contained in the vesicular discharges, but is exhaled by the breath and the excretions of the diseased animals, thus doing away with the popular fallacy that the disease is not contagious before the eruption.

With regard to the etiology of Foot-and-mouth Disease, I have little to state beyond the fact that I believe it to be due to an organism of a vegetable nature, a cryptogam—either a bacillus or a micrococcus; at the same time I am free to confess that, although I have made many investigations, I have as yet failed to discover any specific organism that I could fix upon as being the disease-inducing one. In all cases the discharges contain great numbers of rounded bodies of the nature of micrococci, and in a few instances I discovered a mycelium, differing from anything I had seen before in the animal body, but to some extent resembling the *Saproligniæ ferox*, or the organism found on the skin of the salmon, and causing so much mortality amongst that noble fish.

But I am not in a position to state that either the micrococci or the mycelia are the causes of the disease, as it is almost impossible to get pure cultivations of them, owing to the fact that the discharges contain great numbers of putrefactive bacteria, which generally prevent the development and growth of pathogenic organisms in cultivation-fluids.

It is, however, beyond all question that the disease is due to the invasion of an organism which has an immense power of multiplication. This characteristic is very markedly shown, for a very small quantity is generally sufficient to induce the disease in great numbers of cattle in a very short period of time. This is again proved by the so-called period of incubation being often very short. In one instance that fell under my own immediate notice, a period of twenty hours was sufficient to allow of the full development of the symptoms in six cows, after a diseased one had been in the byre for a few minutes only.

The disease having been developed, runs, in the majority of instances, a short course, and in a period of eight or ten days the animal has, if no serious damage has been done to the feet, regained its health again, and it very often happens that such an animal puts on flesh more rapidly than before the attack; from this fact many people maintain that the disease does no serious harm, and that repressive measures are unnecessary.

But before entering upon a consideration of the legislative aspect of the question, I will now give a brief history of the disease compiled from the able

and exhaustive report of the Agricultural Department of the Privy Council by Professor Brown, for the year 1883.

Foot-and-mouth Disease first appeared in this country in August, 1839, at Stratford, near London; was in Smithfield in September, and from various centres was conveyed both to Scotland and Ireland.

As no animals were landed from abroad at this time, the introduction of the disease is involved in mystery; but as it prevailed in France and the Netherlands, it was doubtless brought from one of these countries is some unaccountable manner. Be this as it may, the disease became very virulent in 1840 and 1841, more particularly among sheep and pigs, and it was not an uncommon thing for large numbers to lose their hoofs whilst standing in the market; and it is recorded that basketsful of hoofs of pigs and sheep were swept up after Smithfield market.

In 1842 the disease declined, and until 1845 but little was heard of it. There was then a sudden outbreak. Then another in 1849, which continued until 1852, after which there was a long period of quiescence. The fourth outbreak occurred in 1861, some Breton cattle at the Royal Agricultural Show which was held at Battersea being among the first attacked. Then in 1865 there was another outbreak along with the Cattle Plague, and it is worthy of notice that the measures adopted for the suppression of the Cattle Plague in 1866 checked the progress of Foot-and-mouth Disease; and during 1867 and 1868 very few centres existed; but Professor Brown states that it is not correct to say that the malady was entirely stamped out by the Cattle Plague restrictions.

In 1869 a very serious outbreak occurred, and which continued until 1872. During September, 1871, as many as 4,000 outbreaks were reported weekly, the number of animals attacked being as high as 40,000 per week. During 1873 the disease remained dormant, but in 1874 it rapidly extended over the whole country. The year 1876 witnessed another outbreak, and which, from its rapid rate of spreading, threatened to be a severe one. The appearance of Cattle Plague in the London dairies, however, led to the immediate adoption of special measures for its extirpation. Local authorities, far removed from the centres of infection, made regulations against the movement of animals and the holding of fairs and markets, so that in their anxiety to prevent Cattle Plague, they checked the progress of Foot-and-mouth Disease, although, before the Cattle Plague restrictions could be brought into operation, Foot-and-mouth Disease had extended over considerable portions of England, Wales, and Scotland.

At the end of 1878 only two centres were known to exist in Great Britain, but early in 1879 the disease began to extend again, and for the first time in this country it was met with severe restrictive measures, which under the Act of 1878 were directed against it. Professor Brown naively remarks: "Perhaps, owing in some degree to the novelty of the provisions, local authorities acted with a certain amount of vigour. Their efforts were from time to time supplemented, when necessary, by the action of the Privy Council, and *the disease was stopped before it had obtained any grasp of the stock of the country.*" (The italics are my own.)

For the first nine months of 1880 this country appeared to be actually free from Foot-and-mouth Disease, and at the end of September no centre of the disease was known to exist in this kingdom outside a foreign animals' wharf; but in October the disease was again detected in a dairy in London, and by the end of the year it was extensively spread over England.

From his knowledge of the history of Foot-and-mouth Disease, Professor Brown concludes that the various outbreaks referred to above cannot be accounted for by the introduction of diseased animals at irregular intervals from abroad. He says:—"Our experience of Foot-and-mouth Disease in

this kingdom for the last forty years has necessarily made us perfectly familiar with the characteristics of the disorder, its effects on the animals' organism, and the circumstances which favour or oppose its extension. Among other things we have learned to expect periodical accessions of the disease, to be followed by its subsidence. Each outbreak or period of excessive prevalence has had an average duration of something over two years, and the period of quiescence has usually continued for about a year and a half. Thus every outbreak has been disconnected from the succeeding one by an interval of rest, during which the affection has remained in a dormant state, never ceasing entirely, but attracting little attention. It has become customary of late years to refer the periodical accessions of Foot-and-mouth Disease to the re-introduction of the infection from abroad, but a moderate reflection will suffice to convince the impartial critic that the periodicity of the disease cannot be accounted for by the introduction of diseased foreign animals at irregular intervals. A more reasonable explanation may be found in the fact that when Foot-and-mouth Disease is allowed to run its course it attacks all the susceptible subjects within its range, and then, having exhausted its virulence, remains in a quiescent state until it finds a new generation of animals to attack."

During the parliamentary discussion upon the Cattle Bill of 1884, several honourable members of the House, probably inspired by the above novel and startling conclusions of Professor Brown, did all they could to defeat the measure; some, upon the ground that the disease was indigenous to this country, whilst others went far beyond this, boldly asserting that the disease was not only indigenous, but a very benign and harmless affair; that there should be no legislative interference at all, and that it should be allowed to run its course, and thus exhaust its strength until a fresh crop of animals were ready for its attacks.

In answer to the assertion that the disease is generally benign, one is bound to admit that it seldom proves fatal to cattle, and but rarely leaves any very grave alteration of structure or permanent damage to the animal's health. But it deteriorates the value of all stock for a time, and it has been considered that amongst half-fat animals, an ordinary attack of the malady causes a loss of from £2 to £4 per head. Now this of itself, when applied to the many thousands attacked, amounts to an enormous loss; this, however, can be overcome as the animals live. The great source of *permanent* loss, both to the cattle breeder and sheep farmer, is an outbreak amongst calving cows and lambing ewes, as many calves and the majority of young lambs are carried off.

Seeing, then, that the disease frequently causes great loss, and a loss that cannot be modified by any medical treatment, I think that the members of the profession generally should hail with satisfaction the passing of the Cattle Bill of 1884, for, notwithstanding the strong assertion of Professor Brown, I believe the majority of the profession still consider that the various outbreaks have resulted from the importation of fresh virus.

With regard to the conclusion that the disease was now naturalised in this country, one honourable member (Sir Lyon Playfair) compared Foot-and-mouth disease to Diphtheria. He said, to this effect, that Diphtheria, then called Boulogne sorethroat, was at one time unknown in this country, but being imported, soon became naturalised, and now we had outbreaks of it without importation; in fact, that the poison of Diphtheria was here as a permanency, and that we had no need of any fresh importations, and that in the same way the virus of Foot-and-mouth Disease was now indigenous, giving rise now and then to outbreaks, and that legislative measures, such as the Bill of 1884, were unnecessary, and by limiting the importation of cattle, would enhance the price of meat.

If the honourable gentleman had given the slightest consideration to the difference between outbreaks of the two diseases, I feel quite sure he never would have given expression to such an argument.

Letters appeared in various daily papers, and as some of them emanated from a well-known and highly-esteemed pathologist, Dr. Creighton, they are deserving of some consideration. Dr. Creighton says (*Standard*, May 1st, 1884), "The disease is troublesome with us because we are necessarily a great importing country, but it has been shown over and over again that the eruption of eczema on the feet and on the mouth occurs more often at the end of a journey than at the time of leaving the 'infected' soil. If it had been always due to contagion from a previous case, it would have shown itself in two, three, or four days after the latest possible date of exposure." Then he endeavours to prove that this is not always the case, and cites an instance of a pedigree animal which developed the disease after arrival in Sydney from this country.

In common with Dr. Creighton I hold the opinion that some ordinary maladies, under certain conditions, acquire contagious properties, but my experience of Foot-and-mouth Disease compels me to conclude that it has never as yet originated, *de novo*, in this country, that it is introduced from abroad, that the aim of all legislative measures must, in the first place, be directed to the prevention of its importation, and I challenge Dr. Creighton to produce one instance of the introduction of the disease into this or any other country from a non-infected one.

I do not maintain that the Bill of 1884 will effectually prevent the introduction of Foot-and-mouth Disease, for it is incontestably proved that the virus may be introduced by persons, clothing, or by anything which has been in contact with diseased animals. I may here relate a circumstance which bears upon this point, and is also explanatory of the supposed non-infective origin of certain outbreaks. A farmer bought a number of sheep in an adjoining county about the end of the clipping season. They were unclipped, and were not long in his possession before they showed signs of Foot-and-mouth Disease. He decided to have them immediately clipped, and put on the pastures in which he wished them to remain, before reporting the outbreak. A neighbouring shepherd assisted at the clipping. This was the last outbreak of the disease in that county that year. The following year, soon after clipping his first fat hoggs, that neighbouring shepherd had Foot-and-mouth Disease in his flocks, and this was the first outbreak in that county that year, and was, for some time, quite a mystery to all except the believers in its spontaneous origin. But after a time the "neighbouring shepherd" remembered that, when clipping the affected sheep the previous year, he had worn a pair of linen overalls, which were then immediately rolled together and laid aside—on the top of an old-fashioned box bed—until put on to clip his own sheep. Now, nearly twelve months had elapsed, but the virus retained all its activity.

Many more cases of a similar nature could be recorded, but none more decisive than this one, as in many some connecting link is wanted to complete the chain of evidence.

The conclusion of Professor Brown that the periodicity of the disease cannot be accounted for by the introduction of diseased foreign animals would have been unanswerable if, during the years referred to, no diseased animals had been imported into this country. But this was not the case, as we find that on September 20th, 1880, twenty diseased cattle from France were landed at the Port of London, and that on October 1st the disease was found in the London dairy. During the remainder of that year, and in 1881, '82, and '83, over 7,099 diseased animals, cattle, sheep, and swine, were landed at our various ports, namely, London, Hull, Hartlepool, Grimsby, Southampton, Portsmouth, Sunderland, and Liverpool.

Now, if Foot-and-mouth Disease were like Pleuro-pneumonia, we could understand that slaughter at the port of debarkation would prevent its spread over the country; but when we bear in mind that the virus, introduced into a port is disseminated in so many various ways, by men, dogs, birds, etc., and that a butcher employed to kill the diseased animals, by associating with others connected with cattle may be the indirect means of conveying the contagium, we can easily understand that the landing of diseased cattle, even upon a wharf and for immediate slaughter, becomes a source of great danger.

The Bill of 1884 gives power to the Privy Council to prevent the above source of danger. As now, the Privy Council must not only be satisfied with the existence of suppressive laws in a country from whence cattle are exported, but that such laws are properly administered. In fact, according to the Bill, a country is regarded as dangerous until it is proved to be safe, and that when any doubt exists, animals must be prevented from landing in this country.

The other assertion contained in the report: "That when Foot-and-mouth Disease is allowed to run its course it attacks all susceptible subjects within its range, and then having exhausted its virulence remains in a quiescent state until it finds a new generation of animals to attack," is disposed of by the fact that Foot-and-mouth Disease, unlike several other specific maladies, does not give an immunity against a second or even third attack. It therefore cannot be said that "the virus remains quiescent until it finds a new generation of animals to attack."

Having endeavoured to answer theories and conclusions which I consider erroneous and calculated to retard proper measures being taken to suppress the disease, it becomes my duty to give my views upon what may be the best measures for the prevention of its future spread.

A reference to the context of this paper will enable the reader to convince himself that when restrictive measures were properly put in force during the Cattle Plague periods in 1866, and 1876, and in 1878 the stricter carrying out of the then novel regulations of the Contagious Diseases (Animals) Act, the disease was almost, if not entirely, stamped out.

After the novelty of the Act of 1878 had passed off, local authorities in various parts of the country became very indifferent, many of them failing to realise their responsibility, whilst others declined to put the instructions in full force, on the ground that the Act was a great hardship upon the British farmer, who also complained that he was prevented from doing what he would often wish to do, by early reporting outbreaks of disease amongst his stock, by the Government taking no measures to exclude the landing of diseased foreign animals. The Bill of 1884 has removed this cause of complaint, and it only now remains for local authorities honestly to carry out the provisions of the Act of 1878.

That the provisions of this Act of 1878 are quite sufficient to stamp out the disease has been amply proved by the success which has been achieved in Scotland, Westmoreland, Northumberland, and some other counties.

Professor Brown says: "It is in some degree satisfactory to be able to modify the remarks which have been made with regard to the inefficacy of the measures which have been generally employed, by referring to particular local authorities who have succeeded in limiting the spreading of the disease by the vigorous administration of the law as it now exists. First in the list stands Scotland, a part of the kingdom which has presented the singular spectacle of a number of local authorities of counties and burghs acting in concert and with one common object. On two occasions in 1882 Foot-and-mouth Disease was introduced, and by the prompt action of the authorities was confined to the premises where it was detected. In 1883 repeated intro-

ductions of disease from Ireland were followed by considerable extension in the spring of the year. It was nevertheless soon reduced to insignificant proportions." ("Agricultural Report" by Professor Brown.)

I am of opinion that instead of local authorities there should be a central body, or, perhaps, three central ones to carry out the law, but as this arrangement is out of the question, it needs no further reference.

Confining myself to Scotland, where I have had ample opportunities of witnessing the successful stamping out of the disease, I may state that the Scotch local authorities for the counties are composed of landed proprietors and tenant farmers, and that these gentlemen are supposed to know something about cattle and their diseases. Anyhow, I always found them ready to pay due deference to the suggestions of their veterinary inspector, and that they do not place the police officer in front of the professional man, as, I am sorry to say, they do in some English counties.

The means taken in Scotland to limit the outbreak and prevent the spread of Foot-and-mouth Disease :—

When the disease was first discovered, the veterinary inspector, assisted by the police, applied the regulations, and at once declared the place infected. No time was lost by having in the first place to report to magistrates or local authorities and obtaining their sanction to declare the place infected, the declaration of the veterinary inspector being quite sufficient for the purpose of the law, and, if correct, was confirmed by the local authority at its first meeting; and, during the prevalence of the disease, meetings were held weekly.

If the opinion of the veterinary inspector were wrong—a thing, however, which never happened—the restrictions and declarations were (or would have been) withdrawn.

In addition to confirming the action of the veterinary inspector, the local authority declared an infected district, into or out of which no animal (cow, sheep, or pig) could be removed, except by licence for slaughter, and in such a manner or along a road as described in the licence, such licence to be in force for twelve hours only.

In addition to these regulations the byres, etc., were ordered to be thoroughly cleansed, whitewashed, and disinfected; but this was found to have no effect in arresting the disease in a particular byre; so it became customary to let the disease exhaust itself before the cleansing and disinfecting were enforced.

In Cumberland and Westmoreland several outbreaks of the disease have been very successfully dealt with; but in these counties large staffs of police were told off to perform special duties to prevent the spread of the disease, and slaughter of the whole flock or herd was often resorted to. In Scotland the suppression of the disease was effected without any very extraordinary police supervision, the policeman of the district calling in daily at the affected places and seeing that no animals had been added to or removed from such places, and in no instance but one was the slaughter of a herd deemed necessary.

Declaration of infected counties and prohibition of the movement of animals from a declared county.—This I consider a great hardship upon owners of cattle, dealers, and others interested in stock, and should be modified.

For example, take any large county in England or Scotland, if disease break out in one corner of the county the whole of it is at once placed under prohibition by other counties, and no animals received, although they may be ten or twenty miles from the infected place; in fact, the whole trade of the county is interfered with, because disease may be only in one byre in that county.

In substitution for this harsh and, in my opinion, damaging regulation, I

should like to see power granted to the local authority nearest the place of outbreak, to declare an infected area or circle, say extending half-a-mile, or even a mile, if deemed expedient, all around an infected place, this circle to embrace portions of one, two, or more adjacent counties if included within its limits, out of which no cattle, except for slaughter at the nearest slaughter-house, could be removed; but beyond the limit of this area there should be no restrictions. Indeed, as stated by Professor Brown, the Act of 1878 "contemplates the concentration of sanitary measures in the centres where the disease exists . . . . that the restrictions on the sales and movements of animals which excite so much opposition are rendered necessary only when the lax administration of the law permits the escape of the disease from the centres to which it should be confined. No argument is needed to prove that so long as infection is imprisoned in a defined area of limited extent, the movement of animals outside that area may be carried on without danger; but this freedom of movement can only be maintained in connection with a perfect system of sanitary regulations, including the isolation of all diseased and infected or even suspected animals, disinfection of all the products of disease, and the use of stringent measures to prevent the communication of infection by the agency of persons or substances which have been in contact with diseased animals or their excretions."

Slaughter of Diseased Animals, except in very exceptional cases, I consider unnecessary, but the subject is well worthy of discussion, and I shall be very glad to hear the opinions of the members of the Association. I am, however, of opinion that the expense should be paid out of the Imperial exchequer.

Disinfection.—So far as my experience goes, disinfection, as a means of preventing the spread of the disease in a particular herd or flock, may be looked upon as a failure, neither sulphurous acid, chlorine, nor the preparations of carbolic acid having any effect, although all of these, as well as chloro-naphtholeum, have been considered to have the power of destroying the contagium. But upon this point I would like to hear the opinion of the members. Of one thing I feel certain, that whitewashing railway trucks, cattle lairs, etc., with slaked lime is a mere delusion, slaked lime having no disinfecting properties, and merely forming a cover for the virus, which may be removed at some distant period, and by giving exit to the contagium cause mischief in the future. It is, however, important that everything which may have been in contact with diseased animals, including manures, fodder, the clothes of attendants, as well as ships, cattle trucks, byres, should be subjected to the influence of some reliable disinfectant.

With regard to inoculation, I am of opinion that it should not be resorted to, and upon the ground that even if successful in propagating the disease in a milder form, it would do harm by multiplying the contagium, and be uncertain in its effects in preventing a second attack.

As to the medical and surgical treatment of the disease, I have but few observations to make. I may, however, state that I do not believe in any specific, as no remedy has yet been discovered which has the power of destroying the contagium. But while I disapprove of specifics, I am strongly of opinion that many animals are compelled to suffer much more than necessary by neglect of professional supervision, and it is sometimes lamentable to see a lot of cattle totally uncared for, medically or hygienically—in fact, just left to their fate, and exposed to the inclemency of the weather. I have seen many so lame as to be unable to stand, left to die from starvation, so callous and careless are some owners of stock.

In conclusion, I beg to draw the attention of the members to the 56th section of the Contagious Diseases (Animals) Act, 1878, which is as follows: "No stamp duty shall be payable on, and no fee or other charge shall be

demanded or made for any appointment, certificate, declaration, license, or thing under this Act, or an Order of Council, or a regulation of a local authority, *or for any inspection or other act precedent to the granting, making, or doing of a certificate, declaration, license, or other thing.*" (The italics are my own.)

Mr. T. H. SIMCOCKS, in opening the discussion, said: I regret that this duty was not entrusted to an English practitioner. My observations on the subject must be taken as applying to the administration of the law in Ireland, although they will doubtless also partly apply to England. There appears, to my mind, to be three questions in connection with this matter. Firstly, has the disease now become acclimatized, and can it originate spontaneously? Can it be stamped out by repressive measures? And, if so, does the result obtained by these repressive measures compensate for the loss entailed in carrying them out? Some very eminent authorities have expressed the opinion that the disease can originate without infection or contagion. I do not set myself up as an authority, but I entirely dissent from this opinion, and my view is strongly borne out by the fact that from 1876 to 1880 we had not a single case of the disease in Ireland, but when it was once introduced, it spread over the country like wildfire. The success of the stringent measures which have been carried out in Ireland is a proof of their utility. Are the repressive measures justified? On this point I will quote a few statistics. In Ireland, from 1869 to 1876 we had about a million animals affected. The loss amounted to about £2 per head, showing a total loss of about £2,000,000. Last year, when the Act of 1878 was in force, we had only about 114,000 cases; and instead of losing £2,000,000, in six or seven years we got rid of the disease for about £230,000. As to the suspension of fairs and closing of markets, I have heard it said that it would be better to allow the disease to take its course, and to put up with the loss. As to the loss, I doubt whether it is so great as some people say. People are very apt to exaggerate, and are slow to tell you what they gain by these measures. With reference to the administration of the Contagious Diseases (Animals) Act by the local authorities, my experience is that, as a rule, they are most unwilling to carry it out. A great many throw every possible obstacle in the way. They break the law themselves, and minimize the good to be gained by the Act. I am strongly of opinion that the local authorities should be abolished and a central body appointed for each of the three kingdoms. At present the disease is liable to be spread about all over the country. I have known an outbreak occur in an infected area, through which animals were not allowed, without great precautions, to pass. I recollect that when Professor McCall was in Ireland, he acted very efficiently. Cordons were established, and most elaborate precautions taken. The first day the restrictions came in force, some cattle spread the disease to Scotland. I must say that I thoroughly agree with the system in force in Scotland. Professor Williams alludes to a case in which the virus of the disease remained in a man's clothes for twelve months. I have known an instance occur on an island, where no cattle had been taken from it or brought to it for months. With a view to preventing the spread of the disease, I would suggest: (1) That all local authorities should be abolished, and a central body appointed in each of the three kingdoms to carry out the law. (2) That as comparatively few animals are now affected, they should be at once slaughtered and the owners receive their full value. (3) That thorough and effective disinfection of all premises, utensils, mangers, gates, etc., near which Foot-and-mouth Disease has existed within six months, should be carried out. (4) That every cattle truck used for the conveyance of animals should be disinfected. (5) That if any outbreaks of Foot-and-mouth Disease occur within the following month, the affected beasts and those which have

been in contact with them should be immediately slaughtered, and the premises in which they were, and the attendants, thoroughly disinfected. If, in spite of these measures, fresh outbreaks continued to occur, I would, from the 1st September to 1st December, close all fairs and markets, and entirely prohibit the movement of store stock. Fat stock, intended for slaughter within seven days, should be moved under licence, to be granted by a proper official. Professor Williams quotes Professor Brown's words, in which he says, "A more reasonable explanation may be found in the fact that when Foot-and-mouth Disease is allowed to run its course, it attacks all the susceptible objects within its range; and then, having exhausted its virulence, remains in a quiescent state, until it finds a new generation of animals to attack." There is no doubt that this is fact to a great extent. I have seen some thousands of cases within the last twelve months and not fifty were attacked a second time. This Act is administered for the benefit of the whole country, and the expenses should be paid out of imperial funds. I will not further detain you, except to thank you for the patient hearing you have given me.

Mr. MOIR: In the district I represent, the cattle-trucks are very inefficiently cleansed, so that the germs of Foot-and-mouth Disease are covered up by the coats of whitewash, until these coats become so thick, that they fall off, leaving the germs exposed. We have the disease breaking out in cattle conveyed from America, after a sixteen days' passage; where is this contracted? I believe that it is obtained from the cattle-trucks. I have called the attention of the authorities to this matter. With regard to restrictions, I believe that the powers given to the local authorities are a great deal too vague. I think that if a five-mile area were taken, it would be quite sufficient. If the disease breaks out in the east end of a county, why should the west end be prohibited from moving its stock?

Mr. OLVER: I am very much interested in this disease, and have endeavoured to obtain improvements in the mode of dealing with it. In my opinion, it is simply ridiculous to attempt to cleanse trucks after the dung has got dry. It requires to be carried out as soon as the trucks are empty. As long as we have cattle-trucks with large boarded sides, they will never be cleansed at all. In the town in which I reside, large numbers of trucks go through every day; and are sent back as they arrive; and are cleansed when they get back; but not before. As a matter of fact, the majority of cases of Foot-and-mouth Disease have broken out near a railway. The orders should come from a central authority. So many divisions are a very great hardship. I have known cases in which the licence has had to be four times countersigned, to take animals four miles. My house stands on the very borders of the county, and if I am prohibited by one county, I have only to move the animals across that border, and I can send them where I like. Professor Williams thinks that disinfection is of little value. I do not agree with him. Within the last few years, I have had many cases in which I have advised the use of disinfectants in the premises and over the animals, and the disease has not spread. I believe that licences are unnecessary. If I, as an owner of cattle, make a declaration that these cattle are free from disease, and that they have not been in contact with others for fourteen days, it should answer the same purpose as a licence. Let the declaration accompany the animals, and this ought to be quite sufficient. Mr. Simcocks asks whether repressive measures are necessary, and whether they compensate for the loss caused in carrying them out. I think that if they were strictly enforced they would do far more than compensate for the loss. As I do not think that the disease is indigenous to this country, I believe that, as a rule, animals do not take the disease a second time within a short period, although I have known instances to the contrary.

Mr. LEPPER: I am certain that Foot-and-mouth Disease does not arise spontaneously, and that it is not indigenous to our country. In the time of the Cattle Plague—when severe restrictions were in force—we had little of this disease. I have known an instance where the disease occurred twice in six weeks. The loss entailed on stock by this complaint is more than we can calculate. As to farmers and others objecting to the regulations, I maintain that they would not do so if no fresh cases were brought in from abroad. The dealers are the means of spreading the disease more than any class; and it is sometimes to their advantage to do so. I believe that the Act passed this session will, if properly carried out, do an infinite amount of good.

Dr. FLEMING: The discussion of this disease is most important from a professional and a legislative point of view. There are certain points upon which the veterinary profession ought to express itself very strongly, and perhaps the most important is the answer to the question: is the malady indigenous to this country? The disease is not a native of Great Britain. It was introduced here in the year 1839. From 1834 to 1838, it commenced to spread in the east of Europe, and extended towards the west. In the latter year, it had invaded Belgium, so its appearance in this country in 1839 need cause no surprise. We must remember, that the serious outbreak of Cattle Plague in 1745 was due to the introduction of two calves from Holland. That the disease occurs solely on account of its contagious qualities, we cannot for a moment doubt. It cannot be generated spontaneously. I really think we have some reason to complain that, after the active efforts which have been made to extinguish this malady in this country, the medical profession should try to make out that it can be generated here. Only a short time ago, a medical man, who stands very high as a pathologist, wrote that it could be generated spontaneously, and that all the repressive measures which we were introducing were useless. He said that our profession was misleading the public. If Dr. Creighton had known anything about Foot-and-mouth Disease, he would have known that we were right, and that the stubborn facts which were realised by the public were against him. The evidence which has been before you will show that this country has been free from the disease, and it can be so again. Legislation has had more of a political character, than one to serve the public welfare. This is not, and ought not to be made, a political question at all, and any one who endeavours to make political capital out of it deserves the reprobation of the entire community. Repressive measures should be most rigidly carried out. As foreigners will be glad to have their stock admitted, if they can, to get them off their hands, we should protect ourselves at our ports. *There must be one central authority.* It should not be left to the discretion of local authorities. I think that the vitality of the germs is greater than is usually believed, and every care should be taken that these are destroyed. I believe that a great deal of the disease is due to the inefficient manner in which cattle-trucks are disinfected. The best means to employ in disinfecting is steam, which should be heated to a very high temperature. Above all things, let us guard against the re-importation of disease-germs into this country, when once it is free from the malady.

Mr. EDGAR: I should like to allude to one outbreak which came under my notice, and which would seem to show that disinfectants are of no special value. It took place in a large dairy, where the sanitary conditions were everything that could be desired; where the cows had received two drachms of carbolic acid, and the drains were charged with disinfectants, yet every animal became infected.

Mr. STANLEY: As to separating the animals, I had last year a case of an outbreak amongst about 100 cattle, and it took five months before the inspector would set us free. As it occurred again this spring amongst the milk-

ing stock, I took the precaution to have every animal removed when it got a little off its feed; the result being that we were declared free within a month. I think that if you remove quickly enough, and properly disinfect, you will stop the spread of the disease.

Professor WALLEY: Acting upon the maxim that every man should add his *quota*, I will make a few remarks. On page 42 of Professor Williams' Paper, he says, "In answer to the assertion that the disease is generally benign, one is bound to admit that it seldom proves fatal to cattle, and but rarely leaves any very grave alteration of structure, or permanent damage to the animal's health." If these remarks are meant to apply to cases in which proper treatment is resorted to, I quite agree with them. But every one must acknowledge that the disease not only often proves fatal, but leaves behind it permanent injury. I have seen animals die in tolerably large numbers, because they have not been properly treated. As to young lambs, there can be no doubt that if they are allowed to suck their mothers when the disease first appears, they will die by thousands. During the outbreak in Berwickshire, Mr. List, the Superintendent of Police, told the farmers to take off the lambs from the ewes for the first twenty-four hours, and this proved a most successful step. Professor Williams says again that the loss cannot be modified by medical treatment. I hold that it can, to a very great extent, if the treatment is properly carried out; and if it is left alone, a very heavy loss will probably be the result. With regard to what Dr. Creighton stated in the *Standard* of 1st May, 1884, I am astonished that a man in his position should have arrived at such an opinion. I quite agree as to the non-spontaneity of this disease. It is an exotic disease, as far as we are concerned. With reference to what Professor Williams says on page 44 as to slaughter at the port of debarkation not being a preventative, I would remark that it is not a preventative in every case, but some years ago when an outbreak occurred in a cargo of German sheep landed at Leith, I had them all slaughtered, and the disease did not spread. In the outbreak of Cattle Plague in 1872, this policy of slaughtering was successful. I must add my testimony to that of Professor Williams as to the readiness with which the local authorities in Scotland have taken their veterinary inspectors' advice, and if all local authorities acted in the same way, the disease would soon be stamped out. As to the establishment of cordons round infected areas, I think that the Act gives the power to local authorities to act as they choose. In the country, in Scotland, a cordon of five miles is thought to be enough. As to disinfection, I maintain that immediately disease makes its appearance, every known method should be brought into operation. It was my lot some twelve months ago to be associated with Mr. Lown. I had the management near Blackburn. We were particularly anxious to prevent the spread of the disease to the best animals, and we accomplished our object by the use of disinfectants. I could cite other cases where the same method has been successful. It is the duty of every veterinary surgeon to understand the proper modes of disinfection. With regard to the disinfection of trucks, if lime were put on hot it would be effective; as it is applied now it is useless. In Edinburgh, immediately the cattle are taken from the trucks, a strong stream of water is turned on with a hose. Every particle of manure is washed from them. If steam could be utilised it would be the best agent, but I am afraid that it cannot be brought into use for this purpose.

Professor MCCALL: I congratulate Professor Williams upon his paper, with which, on the whole, I agree. A great deal has been said about the introduction of this disease. I have been inspector in Glasgow for a long time. On one occasion upon the landing of a number of pigs, we found that Typhoid Fever was amongst them. I had the whole slaughtered, and the disease did not spread. Some time ago, a cargo of animals landed with Foot-

and-mouth Disease. I closed the gate and ordered the butchers to slaughter the animals immediately ; and I made the men themselves be thoroughly disinfected before they went out, and the result was that the disease was not introduced. Some time after, in a similar case in Glasgow, I used the same methods, and with an equally favourable result. I make the men disinfect themselves all over ; this is the only effectual way.

Mr. FLETCHER : I think that the practice of publishing the names of people who have their cattle affected is an injurious one, and in many cases prevents those who have cattle affected from reporting the fact. I have moved amongst large farmers in Lincolnshire and Nottinghamshire for some years, and have heard them speak against the restrictions in force more than against the disease itself.

Mr. SMART : I think that the fear of the importation of this disease is exaggerated. I have seen thousands of cases, and during the time I have been sub-inspector I never knew an outbreak to spread. In all these cases, they were under first-class management ; all the usual appliances for disinfection were at hand. Occasionally, people who have no business amongst the animals get to see them before the veterinary inspector, and then go away and spread the disease. This has been pointed out to the Privy Council, but with no result.

Mr. PETER TAYLOR : How long is the incubative period of the disease? We should know how long we ought to isolate. I think also that we ought to know in what particular stage of the disease the milk is injurious to the human species, and whether boiling destroys all hurtful effects. It is also necessary to know which is the best disinfectant. I have a great affection for the medical profession, and consider that I owe a great deal of my knowledge to their kindness. A great agent at the present time for disinfectants is bi-chloride of mercury and sulphate of copper. I should like to know whether public practitioners have tried them.

Captain RUSSELL : This last autumn we had a severe outbreak in Lincolnshire of Foot-and-mouth Disease. Some of my children suffered from the disease. One child had ropes of saliva, six or seven inches long, hanging from its mouth, and several animals suffered in the same way. I cannot say that my children took it from the milk ; I think it was from going about from place to place with me. I know a family who were taken with similar symptoms. I have seen two cases of this disease in the horse, in one autumn, in which blisters on the tongue and lips were present.

Mr. WIGGINS : I do not believe, after twenty years' inspectorship, that Foot-and-mouth Disease is a native of this country. I believe that if we could trace the outbreaks we should find the origin in each case. But there are so many sources of distribution that it is impossible to do so. In driving beasts across a field where there are diseased animals, you cannot help getting them mixed. Then, again, watercourses spread the disease. Affected beasts loiter in them, and the saliva taints the surface. Then again, flies are a potent agent of dissemination. The beasts are so hampered with the disease that they cannot avoid this pest. The proboscis of these flies may be poisoned. Although they may have come from a distance of even two miles, they will have power to inoculate a healthy beast. Jay's Fluid is a thorough deterrent to the attacks of flies. I herd the beasts in a pen, and thoroughly saturate their hides, and no fly will come near them. As to railway trucks, they are brought back from their destination uncleansed. They are jostled along the line, and sow the seeds of contagion all the way. Other agents of distribution are the shepherd and his dog and the mushrooms gathered. We have had five outbreaks in Leicestershire this summer. As soon as one occurs, the inspector has a quantity of gas-lime laid inside the gate. A police cordon is set up. In one case a highway ran close to the

field. A policeman was stationed half a mile from the field on one side, and another at an equal distance on the other. No one was allowed along the road. No shepherd or dog went into that field, and as a result the disease did not spread. If the police went into the field they thoroughly disinfected their boots. I believe that if we could get rid of the disease it would be easy to prevent its importation. I have known many cases of human beings suffering from this disease, in which case they had acute aching of the joints, and sharp, shooting pains in the lips, tongue, and loins, and, when the disease was apparent, in the feet and between the fingers. These cases passed through the usual course, and the patients got better. I have had three cases, well marked, in horses. In two of these it occurred in foals which were sucking their mothers. There is no doubt that if you boil the milk you remove all danger.

Professor WILLIAMS: In order to insure that my paper should be read, I made it a short one, and was, accordingly, sorry to hear one gentleman say that he had not had time to read it. It appears that, as a rule, you agree with what I have said. This makes it rather difficult for me to reply. I am glad that there is such an unanimity as to the non-spontaneity of this disease in this country, because if it were otherwise all the legislative measures and Orders in Council would be so much waste paper. I think that the abolition of local authorities is out of the question. Gentlemen of position in counties and boroughs will always wish to maintain their influence. My experience tells me that one attack does not give immunity from another. I have seen an animal have as many as four in one season. Various ideas have been promulgated on the question of disinfection, and one gentleman was so eloquent upon the subject of Jay's Fluid that one might think he was an agent for its sale. I must confess that it is a most useful article. But the destruction of the germs of this disease is a most difficult matter. It is easy to destroy the bacilli, but the germs are almost indestructible. You must catch them at the point of hatching, and destroy them before they have had time to arrive at maturity. It takes four days to destroy the germs, before you can prepare a cultivating fluid. For this purpose you must boil it two hours a day for four days. It is all very well to say that you can destroy them with sulphuric acid. If you realise the difficulties which the man in the laboratory meets with, you will better comprehend the obstacles which beset the ordinary practitioner. I do not intend to say that I condemn disinfection, but I leave it an open question, and wished to hear opinions as to what is thought to be the best disinfectant, which, I think, is bichloride of mercury. I have become sceptical as to many specifics. As to slaughter of the animals, I think that it is a very drastic measure. Where necessary to be carried out, the expense should be borne by the Imperial Exchequer; but slaughter far and wide would be ruinous to the country. With regard to Professor Walley's remarks as to taking young animals from their dams for a short time, I have seen calves, that have never had any milk from their mother, die when the disease has broken out upon a farm. I did not for a moment intend you to understand that when this disease breaks out treatment should not be resorted to. Many animals suffer from neglect of professional supervision, and it is sad to see a lot of cattle uncared for. I am surprised that the last paragraph in my paper has not been alluded to. I had a meaning when I inserted it. When a young man goes into a new district he says to himself, "I must get an inspectorship." When he gets it, a party who has an outbreak of disease amongst his stock sends for him. Who is to pay him? The question has been put before the Privy Council, and the reply has been that the local authority must pay. But supposing the local authority says, "No; we are not bound to do so." The inspector might say, "I will not go." But he must go, or he is liable to a fine. We have

abused the doctors, we must now turn to the local authorities, who do not make fair terms with their inspectors. This is a matter which should be pointed out to young men. I am very glad that I have met the feeling of my profession in the preparation of this paper, and I thank you sincerely for listening to me.

Mr. SIMCOCKS then put the following questions to the meeting :—

(1) *Does Foot-and-mouth Disease originate spontaneously?*

(2) *Is the present Act sufficient for the purpose of suppressing it?*

(3) *Are the suppressive measures warranted by the nature and results of the disease?*

To these questions the meeting gave the following replies :—

(1) No.

(2) Yes.

(3) Yes.

The PRESIDENT : I am sure that we have great cause to thank Professors McCall and Williams for the excellent papers they have written. I beg to propose a vote of thanks to these gentlemen, and I know that you will all heartily agree with me.

The vote of thanks having been unanimously accorded,

Professor MCCALL said: I return you sincere thanks, gentlemen. I had some reluctance in accepting the task of writing the paper. Some of you may think that I might have touched upon other points, but I thought that it was best not to do so now, as we shall have other opportunities of discussing the subject.

Professor WILLIAMS: I thank you very much, gentlemen, for your kindness towards me. It has been a great pleasure to me to attend here, amongst so many old friends.

The first day's meeting then terminated.

THE LANCASHIRE VETERINARY SURGEONS' DINNER.

IN the evening of the first day's sittings, the Lancashire Veterinary Surgeons entertained a large number of the members at dinner at the Grand Hotel. The President (Thos. Greaves, Esq.) occupied the chair, supported by the Mayor of Salford and the officers of the Association ; the vice-chairs being occupied by Messrs. John Lawson and W. A. Taylor. Among the toasts were :—

"The Queen and the Royal Family" (chair).

"Army, Navy, and Volunteers" (the Mayor of Salford). Dr. Fleming, P.V.S., and J. Lambert, I.V.S., responded.

"The Houses of Parliament" (Dr. Tatham). In the absence of Sir F. Fitzwygram, M.P., and Mr. W. Agnew, M.P., Mr. Simpson, J.P., acknowledged the toast.

"The Medical Profession and Allied Sciences" (Professor Walley). Responses by Dr. Martin and Dr. Briggs.

"The National Veterinary Association" (Dr. Martin). The President responded.

This social repast was very much enlivened by some capital songs by Messrs. Ed. Faulkner, A. Lawson, G. Locke, etc., and a well-executed recitation by Dr. Briggs.

SECOND DAY'S SITTING.

MAJOR SUBJECT III.

INFLUENZA.

BY PROFESSOR PRITCHARD.

In bringing under your notice the subject of Influenza, it is not my intention to enter into a lengthened thesis upon the disease as seen in the horse. Firstly, because the time at my command will not allow of my doing so; secondly, because the subject-matter is too extensive to be thoroughly dealt with in one paper; and thirdly, in my humble opinion, a short, concise paper, briefly setting forth what may be taken to be the principal points worthy of discussion, is the more suitable to the purpose of a gathering similar to the one to which I have the honour to present this. Holding these views, therefore, I shall confine myself to attempting to bring before you, for your consideration and comment, some of the most important facts in connection with this malady—Influenza—shortly setting forth my own views; and I invite every one to freely and fully discuss such views, so that by a frank interchange of opinion, a more correct knowledge of the nature of the disease, and the modes of combating it may be approached, and a consequent general benefit ensue.

Of the history of Influenza I shall say nothing beyond that there can be no doubt it made its appearance in England a century and a half past, and that from time to time since that period it has visited different parts of the country, in various forms, and with differing severity, up to the present.

The causes which are in operation to give rise to outbreaks of the disease are, to say the least, exceedingly obscure, and although some of the most learned in the matter have for years past worked hard to discover the origin of its visitations, I believe that, even up to the present time, but little is known which can be relied upon respecting its first source of origin. In my own experience I have known it break out at all times of the year, in all kinds of weather, in all kinds of stables, when the dietetic arrangements have been very different—indeed, I may say, under all kinds of circumstances. Very varying are the theories which have been advanced by authors and others regarding the originating cause of the complaint: the character of the soil, exhalations from the earth, temperature, foggy state, excess of ozone in, and other conditions of the atmosphere, the presence of certain animal or vegetable organisms in the air, food, or water, and other ideas have been advanced as representing the primary origin, but one and all of them have either been refuted, or failure of proof has so far negatived them. For my own part, I am inclined to think that the poison of Influenza exists in the atmosphere; it may be that this is a material devoid of any definite structure, which, when introduced in the system of an animal, produces the morbid changes in the blood noticed; or it may be depending upon a parasitic organism capable of reproducing itself under favourable circumstances; but whether it be one or the other, I am convinced in my own mind that the atmosphere is the means by which the virus, whatever the true nature of that may be, is conveyed. With reference to the malady being contagious, after listening to much argument, and having read considerably opinions *pro* and *con*, and having carefully studied and observed the cause of several outbreaks, I have come to the conclusion that this disease is not contagious. To deter-

mine this point, I admit, is a matter of considerable difficulty, because it is next to impossible to decide whether the fresh case is owing to contact with the last, or due to the animal being subjected to the same atmospheric influence. I have, however, based the opinion I hold mainly upon the following facts :—The suddenness with which a stud of horses will become affected, and the rapidity with which a large area will become contaminated. When this disease makes its appearance in a stable, instead of days passing between the falling ill of the animals, a number will become affected in a few hours. On one of the last occasions when I was consulted, over fifty horses in a stud of a hundred and fifty became badly affected in the space of forty-eight hours, and the simultaneous manner in which Influenza will pervade miles of country is inconsistent with the opinion that its spread depends upon its contagious character.

It is not only a quick, unushered visitor, but its stealthy disappearance is incompatible with the contagious theory. Then it must be borne in mind that—at least, so far as I am aware—it has never been propagated by inoculation.

Again, there are unquestionable instances of its spontaneous appearance. These, with other circumstances unnecessary to detail, I consider, fairly point out that, correctly speaking, Influenza is not contagious in its character, and that the affected animals are not the cause of its diffusion—beyond, perhaps, their being the means of adding to the amount of the specific poison with which the atmosphere is charged.

The manner in which this disease, Influenza, manifests itself varies very much—indeed, to such an extent, that I am inclined to agree with the theory advanced by Mr. Hunting, viz , at some not very distant period we shall discover that under this name we are dealing with several maladies which, although in many respects alike, are nevertheless in others sufficiently distinct to allow of their being separately recognised, which may be traceable to different causes, and necessary to be dealt with in different ways.

The fact of our giving distinct terms to some of its forms, the different manner in which the malady runs its course, together with the variety of the results which follow upon its attacks, in my opinion, suggest to us the necessity of further research, which will probably lead to the conclusion that under this vague term, Influenza, we are really dealing with a class of diseases instead of a separate and distinct one. So far as our present knowledge goes we recognise that the poisoned state of the blood creates an extraordinary sudden nervous depression, a condition palpable even in mild attacks; febrile symptoms are marked, and, as a rule, the mucous membranes exhibit the specific effect of the introduction of the morbid material. In very many cases those of the eyes and respiratory tract are affected ; in others, that of the digestive organs is more particularly involved; while in some the lining membrane of the urinary apparatus is implicated.

Whichever portions of the mucous tracts are affected, it is usual to find them congested, in many instances to a considerable degree, while the secretions thrown out from them are altered both in quantity and character.

In many cases the symptoms are slight, amounting simply to a moderate increase of the pulse, elevation of temperature, a watery discharge from the nose and eyes, a little staring of the coat, and a general dull appearance of the animal ; but in others these symptoms are all much aggravated, and, depending upon the organs or parts of the body affected, additional symptoms become apparent ; thus is it that in one form we find there are indications of Jaundice ; in another, the head and extremities are enlarged from serous effusion ; in another, we notice all the symptoms of Congestion of the Lungs, or lining membrane of the chest, or both ; in another, great congestion of the lining membrane of the eyelids, usually associated with a relaxed

condition of the bowels, and even dysentery, but in some instances with a constipated or torpid condition of the bowels; in some few instances I have known the brain to be so congested as to give rise to symptoms of partial paralysis; and in others to cause absolute insensibility for from twenty-four to forty-eight hours. In other cases, associated with the febrile symptoms, have appeared all the indications of acute Laminitis, and in some few I have noticed functional derangement of the action of the heart and diaphragm. Such are some of the symptoms which are noticed in the so-called different forms of Influenza, and, depending upon the parts of the body with which the *materies morbi* more particularly interferes, so its results will differ: hence we find as legacies, Roaring and Whistling, chronic diseases of various of the viscera, Rheumatism, Hydrops Pericardii, Hydrothorax, etc.

In dealing with the question of treatment, I think it unwise to lay down any defined line, beyond certain principles which I think are imperative, because it is absolutely necessary to vary the treatment according to the form the attack assumes. I need not speak of the necessity of complete ventilation and drainage; of the preservation of the equal temperature of the body by clothing; and, if necessary, the application of stimulants to the extremities. I would recommend the free use of diffusible stimulants, and, as a febrifuge, the sulphate of magnesia; the diet, I consider, should be small in quantity, and of an easily-digestible character. Other treatment must be dependent upon the symptoms presented, the practitioner keeping in mind the prostrating nature of the malady, and the depressed state of the nervous system which invariably ushers in the attack.

Mr. W. A. EDGAR: Mr. President and gentlemen, the subject selected for our consideration this morning is one possessing almost unlimited matter for discussion; and I hope that you will not estimate the importance of the subject by the length of the paper. I will not occupy your time by attempting to point out the advantages which must result from this discussion. Owing to its very wide distribution, its somewhat frequent occurrence, and the considerable inconvenience and loss attending an outbreak of the malady, it is imperative that we should possess all attainable knowledge respecting it. The disease possesses some hereditary solemnity; men have regarded it with a certain degree of awe, and the treatment of it is somewhat vague. Professor Pritchard has dwelt more especially upon that point from the discussion of which I think we shall derive most advantage, viz., the etiology of the disease. The literature of any subject may be taken to show the knowledge possessed concerning it; and I must admit, that any one trusting to our English books upon this malady would find his mind in a perfect chaos. There are many affections included under this term. We should clearly understand the grounds upon which we build our views of the malady. The questions I propose now are as follows: Is Influenza a specific disease? and can it arise spontaneously? If we can prove that it possesses the character of a specific disease, we shall be compelled to admit that it cannot arise spontaneously. We will take the line usually adopted, of comparing it with those diseases recognised as specific. I am not here to say that I have discovered any specific organism in connection with this disease; but I think that sufficient evidence could be adduced to enable us to place Influenza with the zymotic diseases, and to say that it cannot arise spontaneously. If we compare the history of this disease with the history of those which are recognised as specific, we shall find that there is a very close analogy. There was a time when England was free from the malady. We find the first recorded instance of it—as far as we can judge from such evidence as we have—in Spain, at about the close of the thirteenth century. Since then it has acted as a specific disease. It has had its periods of quiescence and

activity. In the early part of the seventeenth century it was in France and Germany. In 1727 the first outbreak occurred in Great Britain. Coming to more modern times, we find that the periods of quiescence have usually been about seven or eight years, and it has been marked, as other specific diseases, by about from twelve to eighteen months at a time of activity. In 1850 we had a remarkable outbreak in this country. In 1872 and 1873 it swept through the American Continent. We find that the longer the period of quiescence, the greater its activity when it breaks out. As soon as it made its appearance in America it swept through the whole of Canada and the United States. Professor Pritchard, on page 54, says: "In my own experience I have known it break out at all times of the year, in all kinds of weather, in all kinds of stables, when the dietetic arrangements have been very different—indeed, I may say, under all sorts of circumstances." Here we find proofs of the invasion of a specific malady; it is not controlled by local surroundings. Then again, Professor Pritchard takes up a most extraordinary position. He makes the bold statement that "Influenza is not contagious in its character, and the affected animals are not the cause of its diffusion—beyond perhaps their being the means of adding to the amount of the specific poison with which the atmosphere is charged." There he takes it that the atmosphere is the medium through which the virus is disseminated. Now, gentlemen, we should be clear upon this point. I should like to use the term "infective," because it is a question of medium. If we compare the various specific diseases we find that the virus of one is capable of being conveyed in the air. That of another is too solid and must have some solid material whereby it can be conveyed from one animal to another. The organisms may be transmitted in both ways. Tuberculosis is an illustration. Every one knows of the late experiments to demonstrate that Tuberculosis is transmissible. It has also been proved that the organisms of Tuberculosis exist in the atmosphere. The experiments by the leading physician in the Brompton Hospital prove that the atmosphere there is teeming with the bacilli of Tuberculosis, yet we have to conclude, if we agree with Professor Pritchard, that animals suffering from this disease are no source of danger. I will give one or two illustrations of the way in which the disease extends itself. In 1883 a surgeon in London bought two horses; they were passed as sound by a veterinary surgeon, and conveyed by road to a place twelve miles distant. The next morning one of the horses was ill and the disease turned out to be *Influenza*. This gentleman possessed three other horses when the two above mentioned were introduced. These three horses were perfectly healthy before the arrival of the others, but within three days the whole of the horses in that stable were suffering from specific Influenza. In another instance, a gentleman bought a horse in London. It was brought into the town I reside in, and placed in a stable with three other horses, which were perfectly healthy. The new arrival gave evidence of being affected with Influenza, and again, within three days, the whole stable was affected. Such cases as these leave no doubt in my mind that the disease is infective, and that it can be transmitted from animal to animal. We find that it possesses all the characteristics of a *specific* disease. There is a well-marked, although short, incubative period. Let me call your attention to one point upon which Professor Pritchard bases his opinion that it is not a contagious disease. He says, "I have based the opinion I hold mainly upon the following facts, viz., the suddenness with which a stud of horses will become affected and the rapidity with which a large area will become contaminated. When this disease makes it appearance in a stable, instead of days passing between the falling ill of the animals, a number will become affected in a few hours." This is no evidence of the disease not being contagious. We find that the period of quiescence may last from a few hours to a much longer period in different maladies. Take Rabies as an

instance of a long incubative period. Why should we limit the incubative period? Then he says, "over fifty horses, in a stud of one hundred and fifty, became badly affected in forty-eight hours." With regard to this I remark that Influenza manifests itself remarkably quickly, but the incubative period requires careful investigation, to tell when the disease was first communicated. If a diseased animal is introduced to a stable of healthy horses they are all exposed alike, and may be all infected at the same time, and may manifest the disease in a marked form in forty-eight hours. But after the healthy horses have breathed the virus from the infected animal it will be found that there is a well-marked incubative period, although it may be only a short one. I have taken the temperature of animals periodically, and found that there was a rise in temperature twenty-four hours before the symptoms showed themselves. I consider that this proves that there is an incubative stage in Influenza. As to the disease occurring in different species of animals, we find that it affects the human subject, horses, dogs, etc. I know that I may be treading upon dangerous ground, when I say that I believe Influenza in the horse and Distemper in the dog are different manifestations of the same malady. We can trace a strict analogy in many of these forms. We find that Influenza is incurable. I say this advisedly, because a *specific malady* cannot be cured in the same sense as a *sporadic malady*. Will any gentleman say that when Influenza is well developed he can cut it short as he can a sporadic malady? We can, as has been well said, steer our patient through the disease, but as regards Influenza we should expunge the word "cure" from our vocabulary. The semiology of the malady is so well known that it would be presumption to say anything about it. It is, however, necessary that we should differentiate between this disease and others allied to it. Professor Williams regards the malady as non-specific. Dr. Fleming says, "My own experience inclines me to look upon it as a communicable malady," and in 1883 he says, "That multiform and infectious malady." Professor Robertson says, "There seems strong reason to doubt that, even under such adverse influences as these, the specific maladies—of which Influenza is one—are capable of being produced, unless the specific virus is present." If we go to a foreign authority, Professor W. Dieckerhoff, who has given this malady most exhaustive attention, says that it is a specific, contagious, febrile disease; that its origin is always to be traced to contagion, about ten per cent. of animals being unsusceptible of taking it. In some instances he places the mortality as high as twenty per cent.; in others, five per cent., and in others lower. English veterinary surgeons, such as Mr. Gresswell and Mr. Broad, of London, have expressed their opinions as to its being a contagious malady, the former concluding that it is due to a specific virus. There are many gentlemen here who have had vast experience in the treatment of the disease. I will not, therefore, say much upon that point. We should be guided by broad principles. Our object must be to guide our patient safely through the malady. As to its never having been propagated by inoculation, this is not a proof that it is not a specific malady. We find that specific lung lesions (in "Contagious Pleuro-pneumonia" of cattle) cannot be produced by inoculation.

The PRESIDENT: Mr. Edgar has placed his views before us in a very agreeable manner, and I have followed his remarks with the deepest interest. We shall be very pleased to hear the opinions of other gentlemen. I would remind you that ten minutes is the limit of time for each speaker.

Professor MCCALL: I have always thought that Influenza was an *infectious* disease. Latterly I have been convinced that it is a *specific disease* and contagious. The first year I practised in Ayrshire an innkeeper purchased a horse, which was shortly afterwards taken with Influenza, and from that centre the disease spread right and left; we could trace every outbreak to

this centre. A farmer stabled his horse in the innkeeper's stables, and a few days after his return home all his animals were affected. I will relate another case. Two years ago Influenza was very bad in Glasgow. One man had it amongst his stallions. These horses were sent on their journeys, and everywhere they served mares we had Influenza. Two or three of the stallions contaminated so many mares that they were sent home again. The next season it was thought that they were all right, but again they produced Influenza. I again attended the district examining the animals, and had no doubt that it was Influenza. I thought that I should like to prove that the stallions were contaminating the mares. I had one of them put to a mare, and just as he was about to spend I had him pulled off, and secured the semen. I brought it home to Glasgow, and injected it into a mare's vagina. It had not the slightest effect upon the mare. I obtained some more of the fluid and again injected it into a mare, at the same time inoculating her with it in the neck. It did not produce Influenza, but the mare had an abscess in the neck. The peculiarity of the case is that these mares, after they had been served by the horses, did not affect other mares. Nor did the stallions affect other horses while standing in the stable. I do not know whether any gentleman has met with a similar case in his experience. I think that the disease is specific, dependent upon specific organisms, and that it is infectious and contagious.

Mr. MOIR: I have not the slightest doubt as to this disease being contagious. In the colliery district from which I come, a horse is not allowed to be put down a coal-mine until it has passed through a quarantine of from eight to ten days, and Influenza is unknown there.

Mr. HUNTING (of London): When I explain the circumstances surrounding pit-horses, you will better understand that what Mr. Moir has told us is very suggestive. The temperature in a coal-mine varies very little all the year round, and we find that horses in these mines are free from catarrhal complaints. There are no circumstances in a coal-mine which would give rise to Influenza; but when this disease is introduced it spreads rapidly. I agree with Mr. Edgar in thinking that all positive evidence points to this disease as being contagious. There may be negative evidence the other way; but when we consider how easily the disease is carried from place to place, it is a wonder that there are not more outbreaks of which we cannot trace the cause. Another argument as to its being a contagious disease is, that we can name the time when it first appeared in this country. I cannot agree with Mr. Edgar that Influenza in the horse and Distemper in the dog are different manifestations of the same disease. In 1727 we had Distemper in horses, but not in dogs; in 1763 we had Distemper in dogs, which was traceable to importation. I think that under the term "*Influenza*" we have several specific diseases, which we do not differentiate. We now confuse them in the same way that doctors used to confound typhoid and typhus. There was something very mysterious in what Professor McCall told us, because, if the disease was spread by the horses going from place to place, it ought to have been communicated by the mares to those in the same stable. I think that the facts we have, both negative and positive, point to this as decidedly a specific malady.

Mr. EDGAR: I should like to remark that, although Influenza may not be transmitted from the horse to the dog, this does not show that what I said was not true.

Professor WILLIAMS: A great deal can be said on both sides. The evidence is overwhelming in favour of the spontaneity of Influenza, and most powerful in contradiction of it. We see cases where it is impossible to prove the contagious origin of Influenza; they are so well recorded that it is impossible to doubt that the disease does originate spontaneously. I do not

mean to say that Influenza is not a contagious disease; but drawing a comparison between Influenza and Cholera, I think we have two remarkable instances of a sporadic malady arising from causes external to the animal body, existing in the air or food, becoming contagious owing to the organisms which are injected into the animal's body attaining virulent properties as they pass through that body. When the Cholera broke out in Egypt the doctors stated that it was not imported from India, but that it was due to the marshes of Egypt, but still they say that Cholera is a contagious disease. We can account for these sporadic attacks of Influenza by referring to what has been advanced by many, viz., that there are certain conditions of the atmosphere when there are—as has been proved—clouds of bacteria, which animal bodies take in. These, passing through the animal's body, attain virulent properties. We know, also, from the experiments of Pasteur, that it is possible to render these bacilli innocuous by cultivating them in various fluids. I can thoroughly understand that Influenza can originate from a certain condition of the atmosphere, and that the germs, passing through an animal's body, attain contagious properties, and can then be conveyed from place to place and spread the disease. I think that the history of the disease proves this: Take the case of the outbreak in America where, simultaneously with the outbreak in New York, the disease occurred in places hundreds of miles apart. These cases could not be put down to contagion. They arose from a condition of the atmosphere. As to the identity of Influenza with the Distemper of the dog, I see no analogy whatever between them. They are two different diseases. You can always trace the origin of Distemper. It is a disease which develops more slowly than Influenza. In Distemper, the dog gradually gets worse and worse; the horse is knocked down at once with Influenza. And then we have paralysis in the dog but not in the horse. In the dog we have a most remarkable evidence of a disease which affects many structures. As to treatment, I have found no good effects follow from administering large doses of diffusible stimulants. There may be cases in which the prostration is so great, that a powerful dose or two is required. I can safely say that my success in the treatment of this disease has been equal to that of any one in this room. By these stimulants, the animal is relieved for a time, but at the cost of the exhaustion of the tissues of the body. If the animal is partaking of no food, there is no supply going on, and when the fuel is burnt out where are you? You are left out in the cold. Give small and repeated doses if you like, so long as they promote the appetite.

Mr. J. LAMBERT: I am sorry to differ from Professor Williams as to the pathology of Cholera. The best authorities have maintained that it never occurs unless it has been brought from India. A celebrated German investigator came to the conclusion that it could not arise spontaneously. I know that a commission of English surgeons in Egypt came to the conclusion that the disease was partly endemic to Egypt, but the best authorities think that it cannot be produced by marshes or anything of that kind. I was once living where Cholera was within 200 yards of us. At that time there did not appear to be so much known about it as now. We never heard anything about boiling water or taking precautions as to food, or anything of that sort. It is my opinion that there are many diseases besides the ordinary forms of Influenza that we must recognise as contagious. It is the opinion of very many old grooms that Catarrh is sometimes contagious, and I have found them to be right. In the army we take precautions about "Strangles." Many also think that Pneumonia in the horse is contagious, and I think there is some truth in this. It is said to be caused by changes of temperature. Over and over again, after being in hot stables, we have been ordered out, and had to picket the horses in the open; and such changes

were followed by no untoward results, and animals that had coughs whilst stabled, left off when picketed outside. On one occasion it rained more or less all day, and the horses were standing in mud, but there was no sickness. I throw out the suggestion that Pneumonia depends on some mysterious cause other than change of temperature. In Woolwich—and Mr. Elphick will bear me out here—we have barracks where what is called Influenza breaks out every year, and there are other barracks, close to, where it has not occurred. As to "Pink Eye," we have opportunities in the army of enforcing precautions which you have not. I will only make one remark as to the treatment of chest diseases. My brother, who is a very large practitioner in Ireland, always says, "Never give drenches in chest diseases." He is certain that many more horses are killed in this way than people imagine, from the drench going down the trachea.

Professor WALLEY: Mr. President and gentlemen, the Paper written by Professor Pritchard is sufficient to originate discussion upon this subject, and being put together as it is, it leaves plenty of blanks to be filled up. As to the nature of the disease, I have no doubt that it is purely and simply a specific fever, in every acceptation of the term. That it is contagious and infectious, I have no doubt. There have been cases enough cited here to-day to show that. This disease was brought to Edinburgh by a horse travelling with Wombwell's Menagerie, and numbers of horses which were put into the stable after this one took it. Another case which occurs to my mind is that of a horse which was taken from Edinburgh into Aberdeenshire, to a farm, and immediately afterwards the disease broke out, although it had not been there before. That case mentioned by Professor McCall shows that Influenza is contagious. This is not an isolated case. Mr. Elphick, of Newcastle, if he were here, could tell you of one exactly similar; so could Mr. Mitchell (and in the latter case the owner was the brother of one of my own students), showing that a stallion suffering from the disease may impart it to mares that he covers. The malady is also spread through the agency of water. So much do I believe this to be the case, that immediately I hear of an outbreak, I advise the magistrates to shut up the water-troughs. Every trough is provided with a tap, by means of which you can stop the supply of water. I believe that Influenza belongs to the miasmatic class of diseases. I believe that the virus of the malady can live and multiply outside the body of the animal. This is overlooked. Here we have the secret of the periodical attacks of Influenza. When we have a long continuance of wet weather, we have probably an attack of Influenza; we have just the influences required for the development of these organisms. The origin of Distemper in the dog has been mentioned. I do not think that Mr. Edgar intended to say that the two diseases are identical. They both develop themselves under similar circumstances; they are both due to specific organisms; they both run through a somewhat similar course, and you are very likely to get similar results if the diseases are suppressed. Influenza is always worse where it is neglected, and so is Distemper. If the diseases run their course, and the symptoms are well shown, you are not so likely to get unfavourable results. You get paralysis in the dog; so you do in the horse, over and over again. During an attack of Bilious Fever, I have had two cases of paralysis, with effusion and intense congestion of the spinal membrane. I have seen "Pink Eye" propagated to cows. With regard to Bilious Fever, I have seen the same thing in the dog, when it is prevalent in the horse. You will see that I am using one or two terms, such as Bilious Fever. I believe that Influenza assumes various types. There are the Bilious or the Yellow Fever, the Catarrhal Influenza, and the Effusive Fever. Any one of them may develop similar results, because you have to deal with a poison. As to the evolution

of noxious organisms from the innocuous, I am a believer in evolution, and have always held that such a thing can take place. As to the treatment of Influenza, I am one of those who thoroughly believe in treatment, but you cannot lay down a defined line. You must take each case on its merits. I have been sometimes tempted to bleed, and have had people say to me, "These cases used to recover more quickly when we used to resort to bleeding." We cannot cure the disease, but we can modify it. I have often heard people say that they never give medicine, but when I inquire further, I find that they pin their faith to ammonia. I would sooner trust to ammonia than to any other medicine. As to the use of stimulants, I cannot agree with Professor Williams that stimulants do harm. The pulse often rises from weakness; alcohol will lower it, and will frequently cause the animal to eat. As to the means for prevention, I grant that our services are often not sufficiently appreciated and paid for, and we often cut the ground from under our own feet. Mr. Taylor asked about disinfectants. The record of last year's proceedings will show of what I approve. I say that the best is sulphurous anhydrid. This can be obtained in a fluid or solid form. It is our duty to recommend these disinfectants, and to adopt every means of prevention.

Mr. A. INGLIS MCCALLUM: My experience tells me that an animal may start on a journey in apparently good health, but before it has been out two hours it may be seized with the symptoms of Influenza. I think that if we are called in within the first forty-eight hours we may modify the malady; if the disease has been going on for longer than this, it is very often too late. With reference to the suddenness of the attacks, the veterinary surgeon often has it in his power to encourage litigation, or to stop it. A month or two ago, a case came under my notice, in which an animal was sold in good health. The purchaser used the horse, but returned it one day later than was stipulated, saying that it was a roarer. A veterinary surgeon examined it, and said that it was not a roarer, and the seller refused to take it back. I examined the horse and found that it was suffering from Influenza. In this case there was likely to be litigation. In my opinion the seller was justified in refusing to take the animal back. Relating to what Professor McCall said, I may mention that I was called in to see a mare which had caught Influenza from a stallion. I was afterwards sent for to attend the foal, but by the time I arrived the animal was dead, and at the *post-mortem* examination, there were all the appearances of Influenza.

The PRESIDENT: In the absence of any other member rising, I will give the results of my experience of fifty years of a pretty large practice amongst cart-horses in Manchester. When we hear such directly opposite opinions we are inclined to say, "Who shall decide when doctors differ?" In the large establishments I am accustomed to attend, I have noticed that we go sometimes for months without any attack of Influenza, when all at once I am called in and find some of the horses with signs of Influenza, and very likely on the same day I am called in another direction to similar cases, and before a week there is a wholesale attack of Influenza throughout the town. Can this be contagion? No, it is a mysterious influence in the atmosphere. In these large establishments, they bring in at certain seasons, a number of young animals to take the place of those which have been worn out, and so on. Nearly every one of these young horses becomes attacked with Chest Influenza, from which, as a rule, they recover; but scarcely one of the seasoned horses become affected. I have known this over and over again. If this were an infectious disease, every animal in the stable—or most of them—would be attacked. Then, again, I could mention large establishments where, at one time, Influenza was never absent for many weeks together. The drainage was then in a wretched condition—the effluvia so bad, that sometimes one could scarcely bear to be in the stables. In these stables,

the paving has been taken up, the drainage put right, and from that day to this we have scarcely had a case of Influenza. In these cases the disease was not produced by infection, and I am quite certain that it is not a contagious disease. I have read nearly every work that has been written upon the malady.

Mr. PETER TAYLOR : Our profession is very much like the clerical profession. Unfortunately there is a great difference amongst our professors and amongst our practical veterinary surgeons. I think that it will always be so. Hence the necessity for our National Veterinary Association to enable the different members of our profession to interchange their ideas. I think that our President is confusing two different diseases. Influenza is no doubt a contagious, specific, inflammatory fever. Veterinary surgeons should always err upon the safe side, if they err at all. We have a form of Influenza in Manchester called "Chest Influenza," which is not Influenza. I am certain that it is possible to modify Influenza by the administration of carbonate of ammonia, nitrate of potash, and sulphate of soda. As to what Professor McCall said of a stallion giving the disease to a mare, I should like to know whether, after he had recovered, he would propagate it in a second copulation.

Mr. HOPKIN : I think that in this discussion some are thinking of one malady and some of another. The disease we meet with every day amongst young horses, and occasionally even amongst seasoned animals, is a very different thing to Influenza. Influenza is a vague term. I was sorry not to hear Mr. Edgar's opening remarks. His analogy between Distemper in the dog and Influenza in the horse fails in some of the sequelæ. I never found a case of chorea follow Influenza in the horse. I have found partial paralysis, but not so bad as in the dog. As to diffusible stimulants, I have always given a little well-boiled oatmeal with them. I should like to ask those gentlemen who regard the disease as non-contagious if they would like to have a horse suffering from Influenza introduced into a healthy stud belonging to them. It would help us in discussing this malady if we classified the different diseases we now regard as Influenza.

Mr. ELPHICK : I hold that this disease is due to a specific poison. At Woolwich the stables in which it breaks out are the only stables in the Infirmary in which horses come into contact with other horses. A peculiarity about the case is, that only horses freshly put into the stables become attacked. We have very few old horses, which have been in the stables a long time, affected. The drainage of the Old Horse Artillery stables is imperfect, and on going into them you notice a most unpleasant smell. I think that in this case the disease is not true Influenza. It is not contagious, and affects only the lung tissue.

Professor AXE : I very much regret that I have not perused the paper. I gather from the course of the debate that the chief question you are considering is the contagiousness or non-contagiousness of Influenza. Whilst I have been sitting here, I have thought that a large amount of labour and time might be spared if, instead of going over the old track, over and over again, reiterating statements made by our forefathers, we were to appoint a *Committee of Investigation* on the subject of Influenza. If we were to open an inquiry on a scientific basis, we should not then, as Mr. Taylor has said, be in the dark on the question throughout all time. If the matter were carried out in a proper spirit we should disperse those clouds of obscurity which prevent us arriving at fixed conclusions. As to the specific nature of Influenza there can, I think, be no question. It is specific because it is capable of being transmitted from one animal to another ; not necessarily by contagion ; but certainly by infection : that is to say, through the medium of the atmosphere. I base these conclusions upon observations which have been

made under circumstances perhaps as favourable to arriving at a fixed conclusion as can be formulated by the ordinary means of experiment. I believe that the means at our disposal in our infirmaries place within our reach methods of observation which are as precise as those formulated by well-conducted methods of experiment. We really cannot be expected to believe that the cases which come before us are the result of mere accident. Our President appears to think that there is some quality in the atmosphere itself, which is the cause of the malady, but he has not formulated its nature. A statement like this strikes me as being very misleading. In my view of the question the utility of this National Veterinary Association depends upon its relegating to certain committees certain inquiries, to be pursued by scientific men. I should have wished to pursue this subject further, but I see that the time at our disposal has nearly expired.

Mr. WOLSTENHOLME : After the remarks which have fallen from our President, I think it to be my duty to say something. At the end of last year some cases of "Pink Eye" occurred at the western end of our city. If it had been owing to atmospheric conditions, it would have passed over the town. One case attended by our President was so bad that Mr. Greaves thought he would like to have it removed, and a client of mine allowed it to be put on his premises. My client's horses had to pass near to this animal to get to their stable, but never came into actual contact. In about two days the freshly-introduced horse died. At about the fourth day a horse of my client's was attacked, and six out of seven of his horses went through a severe form of the disease. If we are in any doubt as to the infectiousness of the malady we ought to protect our clients by assuming that it is so, and by not allowing animals to be moved.

The PRESIDENT : The Chest Influenza, which I mentioned as attacking young horses, I should not consider to be true Influenza, in one sense of the word. The disease assumes various forms. The Influenza which is brought by atmospheric influences is that in which we have outbreaks occurring over a wide district. As to treatment, I say, give very little medicine. Simple treatment and good nursing is the best. I sometimes use nitrate of potash, in water.

Professor PRITCHARD : I must apologise to this meeting, and to Mr. Edgar in particular, for the late appearance of my paper. The original paper was lost in the post, and the greater part of the present one was composed in a railway train. I must generalise my remarks as much as possible. Time will not allow me to do otherwise. I quite expected that there would be six on one side and half-a-dozen on the other. I may be wrong, but I am inclined to think that if a vote were taken the majority would be found to be of the opinion that Influenza is not contagious. I have listened with much interest to what has been said, but you will not accuse me of being obstinate when I tell you that I am not convinced. One of my remarks has not been answered : I said that if it were due to contagion so many horses would not be seized in so short a time. Another point which has not been contradicted is, that Influenza will travel over a very large extent of ground in a very short time. I know of no other malady where this takes place to the same extent. As to what has been said with regard to this malady resembling Distemper in the dog, I consider that there is very little likeness. As Professor Williams has said, the manner in which the animals are attacked, and the way in which the diseases run their respective courses, are very different, and the same remark applies to the results. Who has ever seen a case of ulceration of the cornea of the horse as a result of this disease? Then with regard to Paralysis, I have seen this malady strike down a horse, and it has remained so for forty-eight hours. Who ever saw this in the dog? He will be seized with a paralytic fit, and if it occurs twice or

thrice it is pretty certain to be fatal. As to what Professor Williams has said, I believe that there are certain germs which pervade the atmosphere, and produce Influenza, not of a contagious character; and I think that after passing through the horse they may be affected with certain additions which would allow of the malady being conveyed about the country. I hinted at this in my paper, when I said, "Beyond, perhaps, their being the means of adding to the amount of the specific poison with which the atmosphere is charged." A great deal, with reference to the point of contagion, has been said about conveying a horse from one part of the country to the other, but I noticed that the other side of the question was well avoided. Mr. Edgar alluded to cases of diseased animals having been taken into districts and creating an outbreak. Has he ever noticed the numerous cases where healthy animals have been taken from healthy localities into another district, and have become affected, although the disease has not before been in the stable where they are placed? In alluding to what Professor Axe said as to the investigation of the disease, I think that we should first see whether, under a vague term, we are not dealing with a number of complaints. As to treatment, I think we ought to bear in mind the locality in which we are placed. If you go to Edinburgh you will find that doses of aloes of from seven to twelve drachms are given, and the same thing may be said of the Eastern Counties. Our horses in London are just as well fed as anywhere else, but if we were to give them such a dose as I have mentioned we should kill them. The same may be the case with other medicines. I am constantly treating cases of Influenza, and I give large doses of diffusible stimulants. I have seen the temperature after two doses have been given come down from 107° to 101°. We have to consider the stage of the malady in each case. If I were called in to a case which had been neglected for twenty-four hours, I should not perhaps carry out my usual line of treatment; but if we are called in when the animal's illness is first noticed we have a chance of dealing with the disease by diffusible stimulants. I believe much in the sulphate of magnesia, and think that it is the finest febrifuge we can give to the horse. I thank you, gentlemen, for the manner in which you have listened to me, and I congratulate myself that my paper has produced so good a discussion.

The opinion of the meeting was then taken as to *whether Influenza is a contagious disease or not?* Fifty-three members voted in the affirmative, and only seven in the negative.

MAJOR SUBJECT IV.

THE PREVENTION OF CRUELTY TO ANIMALS.

BY T. BRIGGS, F.R.C.V.S., BURY, LANCASHIRE.

It will be as well at the outset to state that the purpose of this paper is rather to bring about a more satisfactory and sensible method of preventing cruelty to animals, than to essay a definition of what is and what is not cruelty. It is obvious, however, that this purpose cannot be strictly set. At the British National Veterinary Congress held in the month of July, 1881, a paper was brought forward on "Cruelty to Animals from a Veterinary Point of View," by Mr. W. Hunting, in which an attempt was made to state and classify what acts and operations constituted cruelty, and to some of the remarks made in the lengthy discussion which followed I shall have occasion to refer later on.

Great and well-merited praise is freely and fully given by all lovers of animals to the various societies that have been established by benevolent

and beneficent ladies and gentlemen. Foremost is the Royal Society for the Prevention of Cruelty to Animals, supported by voluntary contributions, and constituted of people whose kind-heartedness and generous sympathy for animals cannot be doubted. By its teachings and its precepts, this admirable Society has been the means of largely developing a better fellow-feeling for those creatures which destiny has doomed to be the companions and servants of mankind; and these domesticated creatures would, did they know how, willingly worship at the shrine of the Society. The Royal Society for the Prevention of Cruelty to Animals has done, and is doing, a great and a good work. Who can count the abundant abuses, and the innumerable cruel customs that have been exposed and abolished through its laudable exertions?—abuses and customs carried on from habit, or from fancy, and more for want of thought, possibly in indifferent ignorance, than from any intention of inflicting pain. After these loyal and cordial expressions of appreciation and good will, I regret that I shall have to deal somewhat largely in what, at first sight, may appear to be a spirit of antagonism to the Society, and to pass some severe censure upon its Executive.

"There is a lying spirit abroad" in the popular fallacy that veterinary surgeons as a body are prejudiced against the Society, and are perpetually prepared to thwart its good intentions by appearing in the witness-box to give evidence against the statements of its officers. This is not true. Indeed, nothing could be further from the truth. In the Report, Part I., of the Proceedings of the British National Veterinary Congress, for 1881, on page 106, Mr. Colam, the energetic and enthusiastic Secretary of the Royal Society for the Prevention of Cruelty to Animals, in the discussion on Mr. Hunting's paper, is reported to have said: "When occasion requires, I sometimes address a letter, asking you for your opinion, and I have never yet done so without receiving great courtesy, and willingness to oblige me, which is gratifying, considering that you do not get any fees for these opinions. . . . . We get your opinions, and disseminate them amongst the public."

In speaking of a successful attempt to lessen the space of time in which cattle were allowed to travel on the railway without water, Mr. Colam says: "I issued a circular to all the profession; I got five hundred answers, and with them I went to Mr. Forster, and when this pile of papers were shown him, Mr. Forster said, 'I am of your opinion.' Our great object is to provide the animals with water when travelling, without removing them from the carriages.

"I am sorry to hear it sometimes stated that over-zealous charges are occasionally made, which are to be attributed to the number of sentimental 'old ladies' of the Royal Society for the Prevention of Cruelty to Animals. As one of the old ladies of the Institution, I must state that the remark is entirely false. I am sorry if any gentleman among you thinks that the Society is governed and maintained by old ladies. I beg to inform him that it is not so; the Society has not only maintained its reputation, but has gained additional reputation year by year. The object of that association is to be as practical as possible, and not to exceed the bounds of common sense. I am a responsible officer; if there are any cases brought before the magistrates that fall through, then blame me.

"The convictions of the Royal Society last year amounted to 4,500, and of that number, the cases which were lost were not more than two-and-a-half per cent. Can any one say, then, that it is governed by old ladies?

"In fact, it is our pride and boast that we are not old ladies, and if we have any doubt, we go to the veterinary surgeons, and we say to them, Are we wrong, or are we right in this matter?"

It is when the Society stretches its arm too far, and plunges promiscuously

into prosecutions, seriously interfering with rights and privileges which certainly ought to be enjoyed by respectable veterinary surgeons, that affections are alienated, assistance refused, and an attitude of hostility assumed. No man has the same accurate and reliable knowledge of what is likely to produce pain in an animal, the same opportunities and the same power to alleviate pain, as the veterinary surgeon. Who can say with truth that these opportunities and this power are lost sight of, or ignored, or wilfully misapplied? If the Society in its restless resolve to be continually extending its provinces, lets reason run rampant, and by intentionally or unintentionally impugning the motives which influence the opinion of the respectable and responsible veterinary surgeon, is it to be wondered at that local and influential men cannot be easily enlisted in the services of the Society?

Dr. Fleming says, on page 110 of the said Report, "The position in which the veterinary profession stands with regard to cruelty to animals, is a very proud one. As I said in my inaugural address yesterday, I look upon the position of a veterinary surgeon as one of humanity to animals.

"His office is a grand one in this respect. He knows all about the animals; he should know what is necessary pain, and what is not—in fact, I look upon the veterinary surgeon as the scientific and almost the natural protector of animals. I therefore think the position of our profession with regard to animals as even with that of the medical profession.

"The veterinary surgeon has to deal with dumb animals, that cannot complain, the noblest of which is an animal whose early days are passed in luxury, but whose old age is harassed with torturing work.

"I allude to the horse. You know perfectly well no animal suffers more at the hands of man. I think, gentlemen, there is no need to urge upon the veterinary profession the necessity for the observation of kindness to animals. I am quite sure, if a veterinary surgeon has an operation to perform, he will think much of the way in which it can be performed, and as to how it should be performed. I have hesitated for days about performing an operation on horses in my regiment before I could nerve myself to do it. The more one operates, the more tender one becomes—that has been my experience.

"You must remember, though, that even at present, the profession is particularly exposed and tempted to perform unnecessary operations, and this operation of 'docking' must be looked upon as unnecessary; but we must make exceptions. In the case of disease, or of a vice to be cured, then the operation is necessary, and by that means it is removed from the category of cruel operations."

After further alluding to docking, cropping ears, "punching out horse's teeth," and vivisection, he goes on to say:—

"I am quite sure that the profession in this country requires no urging in its endeavours with regard to cruelty to animals. I am certain, also, that its feeling is entirely with the society for preventing cruelty to animals. I have been a member of the Council of the Royal Society for the Prevention of Cruelty to Animals since the death of Professor Spooner, and I can give you an assurance that the Council are extremely anxious that every case should be fairly considered *before any action is taken upon it*, and that the opinion of the veterinary surgeon should be taken in any case of doubt.

"I think there is the closest bond of union between the Royal Society for the Prevention of Cruelty to Animals and the veterinary profession. They are both working on the same lines, but we go further than the Royal Society; we also try to improve the condition of animals, we also endeavour to increase their utility to the very utmost of our power. . . . *The question of utility is always an important one in such decisions.*

"A necessary operation is not cruelty, but an unnecessary operation is

certainly cruelty. *It remains for the profession to decide as to what operations are necessary and what unnecessary.*"

According to the utterances of Mr. Colam and Dr. Fleming, there would appear to be a spirit of unanimity between the Society and our profession; but ask the veterinary surgeon who practises in the larger towns if this is so.

Year by year some of its quondam friends desert it, and when an important prosecution is undertaken, a somewhat false impression is created in the public mind by the fact of the Society having to send to London, or some other distant place, for professional evidence of weight and authority to support it. There are quite as humane and independent men in the provinces, and the Executive of the Society knows full well why these men are not forthcoming to help it. Following in the footsteps of most powerful bodies, a course of procedure having been entered upon, nothing is allowed to stand in the way of an ultimatum—a conviction in favour of the Society as a precedent—a precedent to be pleaded and paraded ever afterwards, before every bench of magistrates in the kingdom.

Take, for instance, the determined and desperate efforts that are being made to obtain a conviction in a high court of justice in favour of the Society against docking. Mr. Colam says :—

"With regard to docking of horses, I am in a position to state that it is considered cruelty, and if I can catch any single member present docking a horse, I shall prosecute him. I tell you so at once ; it is now decided that when any man who performs an operation on an animal that is not for the benefit of the animal itself, or *for the benefit of mankind*, that operation constitutes cruelty."

Docking, when practised right and left, without discrimination, discernment, or real reason, is brutal butchery, and cannot under the most favourable circumstances be performed without more or less pain. It would be out of place here to discuss when the operation should be resorted to. The most prominent professional opponents of docking admit that at times the operation is "necessary and advisable." The subject has been thoroughly thrashed out of late, and there is a remarkable consensus of opinion in our profession against the Society dictating to us when the operation is permissible. The profession has, in the most unhesitating manner, declared almost to a man against the Society in the matter of docking.

In the VETERINARY JOURNAL for June, page 471, is a report of the evidence of Dr. Fleming in a "docking" case brought before the magistrates of a small town in the North Riding of Yorkshire, on the 3rd of May. Let us carefully study what he says :—"He had about 15,000 horses under his charge. He had paid special attention to docking, especially in connection with army horses." If, as he says, the practice "had been prohibited for upwards of twenty years," where and when has he paid his special attention to docking in connection with army horses? He continues, "Not merely veterinary surgeons, but also soldiers and officers, were strongly against docking." Now I publicly challenge him to bring forward the names of fifty influential veterinary surgeons, whose experience is not principally connected with the army, to support his statement. Of soldiers I know nothing, but I have not met an officer who has objected to a horse for private purposes because the animal's tail has been docked. Dr. Fleming also said, "Docking was a great disadvantage to horses, as they then lose their natural defence against flies. [So horses do when their tails are shortened by cutting the hair only.] In cases where horses have not been docked, it was found that their tempers were much improved." It would be interesting to know how it was "found" to be thus, and how "much" the tempers were improved. I dispute his last assertion, "From evidence he had collected, he had found the majority of accidents happened with horses whose tails had been docked."

Is not this sort of evidence eminently unsatisfactory, conflicting, and inconsistent?

Grievances and abuses are probably best remedied by agitation, and the present tirade against docking will undoubtedly be productive of good results. Many horses that would have been needlessly and ruthlessly docked will now be spared the full stump, and it is to be fervently hoped that for the future the operation will be properly performed, with a fitting instrument, and the searing iron abandoned. Personally, I am as much against docking for docking's sake as any man, but I most strenuously protest against this earnest endeavour of the Society to get in the thin end of the wedge. I claim for the great majority of my professional brethren, and for myself, as fine feelings of humanity and sympathy as those possessed by any member of the Society, and I would scorn to think that we require the surveillance and constant watch of its officers to keep us from being criminally guilty of cruelty to animals.

I will now proceed to the consideration of a more conflicting class of cases, viz., old-standing, chronic cases of lameness, and deformities in the horse. Very great judgment and care are required to arrive at anything like a correct opinion, and to accurately ascertain the actual amount of discomfort and pain the animal suffers. There would appear to be one law for the rich and another for the poor, judging from the manner the Society carries on these cases. The greatest hardship is inflicted upon the poorer owners of animals. The method adopted in this part of Lancashire is somewhat as follows:—An officer of the Society picks up with a veterinary surgeon who is out of luck, and has nothing to do, and takes him for a day's outing to some neighbouring town. By a curious coincidence, the time chosen is generally the morning of a day upon which the local magistrates sit. On arrival at this town, a stroll is taken along one of the thoroughfares, most likely one leading from a coal wharf. A man is seen coming up the street with a halting or a lame horse. The poor fellow is stopped by the officer, and the inevitable crowd gathers. If there is anything like a chance of a case, the man and the horse are forthwith marched off to the police-station. The culprit is, rightly or wrongly, taken into custody, brought before the magistrates, probably fined, and the whole affair over in a few hours, the bench and the public being reconciled to these summary proceedings by the plausible plea that it saves time, trouble, and extra cost.

Within the city of Manchester it is often the custom—if the magistrates have finished their sittings for that day—for the officers of the Society, on detecting "a case of cruelty," to seize the horse and place it in the City Pound, or elsewhere, and tell the driver that he is to appear at the police-court at such a time on such a day—no warrant and no summons being issued. For this system simplicity can be claimed, but is it not very peremptory?

If, however, the cripple belongs to a man in a higher position of life, nobody is locked up; the drivers' and owners' names and addresses are noted by the officer, and a summons is taken out for some future day, when the case is heard.

Great hopes were held out here when the Royal Society superseded the late Manchester Society, that these inconsistent irregularities and absurd anomalies would be done away with. They may be. They have not been as yet.

A very unsatisfactory incident in the conduct of cases which require the accurate knowledge of an experienced veterinary surgeon to determine the amount of suffering, is the very *decided* evidence of the officers of the Society.

(To be continued.)

Army Veterinary Department.

Gazette, May 29th.

Inspecting Veterinary Surgeon Charles Steel to be placed on retired pay.

Veterinary Surgeon (First Class) John Anderson to be Inspecting Veterinary Surgeon, *vice* Charles Steel, retired.

In his final despatch to the Secretary of State for War, in alluding to the services of the different corps and departments under his command in the Suakin Field Force, Lieutenant General Sir Gerald Graham, K.C.B., mentions that "the Veterinary Department was well managed and gave satisfaction."

Veterinary Surgeons E. E. Bennett, A. Jones, C. J. Gillard, and J. Baldock have been invalided to England from the Soudan. The last-named officer was so seriously ill from heat exhaustion, that on arrival at Portsmouth he had to be transferred to the Royal Military Hospital at Netley. Veterinary Surgeons Gladstone, Griffiths, Dundon, Smith (S. M.), and Taylor have also been in hospital during the campaign. Veterinary Surgeon Willows, who accompanied the Australian contingent to Suakin, has also been ill at that place.

Veterinary Surgeons Aitken and Hagger have arrived in England from Suakin in charge of the horses of the 5th Lancers and 20th Hussars.

The Principal Veterinary Surgeon had the honour of being invited to, and was present at, the State Dinner given by the Marquis of Hartington, Secretary of State for War, at Devonshire House, on the Queen's birthday.

At the Levée held by the Prince of Wales at St. James's, on May 9th, First Class Veterinary Surgeon J. B. W. Skoulding was presented by the Adjutant-General, Sir Archibald Alison, Bart., K.C.B.

Obituary.

Melchior Guzzoni, Professor of Sepicial Pathology and Clinical Director in the Milan Veterinary School, in February last, after a short illness, aged forty-one. C. Neuschild, Professor of Farriery in the Dresden Veterinary School, also died recently. The death is also announced of Dr. Karl v. Siebold, Professor of Physiology and Comparative Anatomy in the University of Munich, whose name is well known to helminthologists in connection with the natural history of tape-worms.

The demise is reported of William Roberts, late Farrier-Major of the 4th Hussars, and one of the Balaclava Six Hundred. He died at Nottingham, aged fifty-three.

Notes and News.

LINNÆAN SOCIETY.—First Class Veterinary Surgeon J. T. Symonds, Army Veterinary Department, has been elected a Fellow of this Society.

SWINE PLAGUE.—The Royal Academy of Medicine of Brussels, among several subjects selected for theses and prizes, have named the following: "The study of Erysipelas, *charbonneux* or *rouget*, of swine, as relating to its causes, manifestations, lesions, prophylaxis, and treatment, and to establishing eventually its relations with carbuncular or bacterian diseases."

HERMAPHRODITISM IN THE GOAT.—At the meeting of the Academy of Medicine in Ireland, on April 24th, Dr. J. Cunningham, the President, made a communication on hermaphroditism in the goat. The external genitals showed merely an imperforate clitoris-like body, and behind this an aperture just large enough to admit a goose-quill, through which the animal micturated. One oval body, which felt like a testicle, was detected in a diminutive scrotum. On opening the abdomen, a large bicornuous uterus was discovered, with a capacious vagina imperfectly marked off from it. This vagina opened into the uro-genital sinus, which in turn opened on the surface at the aperture before mentioned. Two well-developed testicles occupied the places of the ovaries in the broad ligament, and each showed a small hydatid of Morgagni and a large organ of Giraldès. The latter had been injected with mercury, and a connection had thus been established between its tubes and those of the globus major and the tubuli seminiferi of the testicular body. The vas deferens ran down in the wall of the uterus (like the duct of Gartner in the sow) and opened into the uro-genital sinus. Embedded also in the wall of the vagina were traces of the vesiculæ seminales. The author regarded it not as a case of true hermaphroditism, but as a case of hypospadias in conjunction with a great development of the vesicula prostatica.—Dr. Purser suggested that in such cases there should be a complete and thorough microscopic examination. There were some animals in which the genital gland was neither completely male nor completely female, even in animals high in development; for instance, the common toad had in the upper part of the testicle an organ which was not functionally an ovary but was structurally an ovary. In amphibious animals, it was by no means uncommon to find in the same animal a more or less developed testicle, and at the same time a well developed oviduct. Again, in some of those cases when the testicles had been cut into, there had been found embedded therein bodies precisely resembling ova. This mixture of the male and female sexual organs was a question very much of degree, and it was not unlikely that it would be found that in the genital glands there were represented both the male and female cells, both ova and spermatozoa.

VIVISECTION.—A return has been issued by the Home Office containing the reports of inspectors showing the number of experiments performed on living animals during the year 1884 under licenses granted according to the Act 39 and 40 Victoria, c. 77, distinguishing painless and painful experiments. The former of the two reports deals with England and Scotland, the latter with Ireland. They are as follows:—"1. The names of the 49 persons who held licenses during any part of the year are given in the subjoined tables, in one of which are entered the names of those licensees who performed any experiments, 34 in number; and, in the other, the names of those who performed none. 2. The total number of experiments of all kinds performed during the year was about 441. Of these, 140 were done under the restric-

tions of the license alone ; 78 under the same restrictions, but under certificates in column 1 (lecture illustrations) ; 145 under certificates in column 2 ; 76 under those in column 3 ; and 2 under a certificate in column 4. 3. With regard to the infliction of pain, as in all the experiments, except those under special certificates in columns 2, 3, 4, the animals are rendered insensible during the whole of the experiment and are not allowed to recover consciousness, no appreciable suffering would be caused if the provisions of the Act are faithfully carried out, as there is not the least reason to doubt they were. With respect to experiments under certificates in columns 2, 3, and 4, which dispense either wholly or partially with the use of anæsthetics, it should be stated—(*a*) That of the 145 experiments performed under certificates in column 2, 99 consisted in simple inoculation with a morbid virus, in which no operation beyond the prick of a needle was required, and for which the administration of an anæsthetic would only have entailed needless annoyance and distress to the animal. In these experiments, any appreciable suffering would be felt only in those cases in which the inoculation took effect, involving about the same amount of pain as ensues on ordinary vaccination, before the brief period the animals were allowed to survive. Of such cases, according to the returns I have received, about 16 occurred. Of the remaining 46 experiments under these certificates, 24 were performed for the purpose of medico-legal inquiries in cases of suspected poisoning, resulting in the death by Tetanus of three frogs, and six mice, which survived, however, only a few minutes ; 10 other cases under the same head were experiments on the infection of fish with a species of fungus, very destructive in certain rivers and streams ; and 5 on the effects of immersion of fish in distilled water, which proved fatal to about 30 minnows and sticklebacks. In none of these cases could it be said that any appreciable suffering was inflicted. In 7 cases, in which salts of ammonia were hypodermically injected, two are returned as having suffered pain, but of a very trifling character. (*b*) Of the 76 experiments under certificates in column 3, 47 required a simple operation, but this being done under anæsthesia was unfelt, and the after effects, though in many of the cases resulting in partial paralysis, are reported as having been unattended with actual pain in any case. The remaining 29 were by simple inoculation, and none were attended with pain. 4. In conclusion, therefore, it may be stated that the amount of direct or indirect actual suffering, as the result of physiological and therapeutical experiments performed in England and Scotland, under the Act, in the year 1884, was wholly insignificant. GEORGE BUSK, Inspector. The Right Hon. the Secretary of State." "16, Harcourt Street, Dublin, May 17. Sir,—In accordance with your instructions I beg to submit the following table, showing the licenses in force in Ireland during the year 1884, under the Act 39 and 40 Victoria, c. 77. No certificate has been allowed during the year. Several of the licenses in force during the previous year have expired, and renewals have not been sought for. Under the licenses in force 13 experiments have been made ; they were all painless. I am of opinion that the experiments in question were useful ones ; 11 of them were intended to elucidate the actions of drugs, and the remaining two to assist the investigation of certain circulatory phenomena which have a bearing upon the treatment of disease. I have, etc., W. THORNLEY STOKER. To the Right Hon. the Chief Secretary for Ireland." In each case the report is followed by a list of all persons who hold such licenses, the places where they are permitted to make experiments, and the nature of the certificate held.

Correspondence.

CONTAGIOUS PUSTULAR STOMATITIS AND HORSE-POX.

SIR,—If Professor Walley will please to look again at my letter under the above heading in the May number of the Journal, he will find that there is no justification whatever for his statement that I made any complaint against him because he did not give sufficient prominence to the fact of my having been the first to describe the disease in this country. I cannot conceive how he came to make such a statement, as I made no complaint of the kind he alleges, and there was no occasion or desire to do so, as I presume the fact is known to all who follow with any interest the progress of veterinary medicine in this country. In my letter I was only moved by the desire to know what Professor Walley meant by the term "Horse-Pox" or "Equine Variola," if the disease which he witnessed was not that malady, but a distinct disorder; and I must confess that I am no wiser now. The notions with regard to Equine Variola and Vaccina are so diverse, and especially as to their origin, that I might be pardoned if I endeavoured to elicit the opinions of those most competent to speak upon such a subject. With regard to the generalisation, to a limited extent, of the eruption in two of my cases, I may remark that there was no indication whatever of auto-inoculation—no more, in fact, than in a case of Glanders accompanied by the eruption of Farcy; though in "Veterinary Sanitary Science and Police" (vol. ii., p. 79) I have alluded to the possibility of auto-inoculation. With respect to the abortive treatment of "Foot-and-Mouth Disease, I spoke only of the vesicles, which can certainly be checked in their development by appropriate treatment, though the fever may persist. Suppurative Lymphadenitis has frequently been observed, and if I remember aright, Professor Trasbot, of the Alfort Veterinary School, not long ago published a paper in which, owing to the frequency of this phenomenon—or, rather, epi-phenomenon—he insisted that Horse-pox was Strangles, or *vice-versâ*, and that cases of the latter usually had the characteristic eruption about head or in the mouth. In "Veterinary Sanitary Science and Police" (vol. ii., p. 80) I have described the nasal eruption of Horse-pox as nearly always coincident with implication of the submaxillary lymphatic glands. In conclusion, I can only repeat that in noticing Professor Walley's observations on the so-called Pustular Stomatitis my sole object was to obtain information regarding an interesting disease, or class of diseases, to which I have given much attention for a long time. The disease described by the Professor, and which, I believe, is the same malady I have seen, may not be of the nature of Variola; but my experience of it led me to conclude it was, and this conclusion had been arrived at by others before me. I never questioned Professor Walley's having seen typical cases of Equine Variola; I merely mentioned that he had not described them—and I believe this is true. I earnestly hope that all who have the opportunity of witnessing Variola or the varioloid disease in animals, will not hesitate to give us the benefit of their observations, and especially afford us a description of the symptoms presented.

G. FLEMING.

SPAYING: IS IT JUSTIFIABLE?

SIR,—It is to be regretted that a gentleman so thoroughly conversant with the subject of spaying as Mr. Welham, should have travelled away from the question asked, and omitted it altogether in his very amusing letter about pigs, farmers, alcoholic poisoning, horse-coping, and the frequent incompetence of veterinary surgeons to perform an operation which, he says, they alone should be permitted to attempt. In asking the question, Is spaying

justifiable? I did not include the question of, Is it remunerative? or, Is it necessary, in order to compete with unqualified practitioners, that we should do it? I am one of the number who *do* practise it when obliged, and in self-defence, but am not the less anxious to see discontinued a practice which, to my thinking, is unnecessary, and therefore cruel. If we take no higher ground than that it is *remunerative*, we should still go on "nicking," "cropping," and "dubbing," and perpetuating all the other cruel customs handed down to us.

HAROLD LEENEY, M.R.C.V.S.

DISEASE AMONG ANIMALS IN SOUTH AUSTRALIA.

SIR,—In the September number of the VETERINARY JOURNAL, pages 189 190-1, my annual report is brought under notice.

An unfortunate mistake has occurred, which I suppose must be attributed to the manner in which the report had been printed.

Swine Fever, Farcy and Glanders are understood to be prevalent in South Australia. The paragraphs following "Foot-and-Mouth" Disease in Great Britain, noting on Swine Fever, Farcy and Glanders, and Pleuro-pneumonia, refer to the state of those diseases in Great Britain, to which our stockowners naturally turn with interest, and in the province it was so understood.

I shall feel obliged if you will note that neither Swine Fever, Farcy, or Glanders, has ever been known in South Australia.

I may say that stock of all descriptions in South Australia are remarkably healthy and free from all descriptions of disease; so far as Scab in sheep is concerned, there has been no case for over thirteen years.

I am exceedingly sorry that the error should have occurred.—I have the honour to be, sir, your obedient servant,

Adelaide, *Nov. 7th*, 1884. C. J. VALENTINE,
Chief Inspector of Sheep, South Australia.

[The error was due to the manner in which the report was printed, and we are very pleased to learn that this important colony is so free from not only contagious, but sporadic diseases.—Ed. *V. J.*]

KUMRI.

DEAR SIR,—When Mr. Skoulding wished to tell you of his supposed right to the discovery that "Kumri" was not a true paralytic disease, he need not, in his over-anxiety to do so, have been so rude as to charge me with misappropriating his ideas, etc.

I deny the correctness of these charges, and have, moreover, repudiated them, with due contempt, to his face, and he has expressed his readiness to withdraw what I consider incorrect and offensive.

Though bound to reply, I regret this addition to the unbecoming controversial literature which has recently crept into fashion.

RICHARD POYSER, V.S.

UNQUALIFIED VETERINARY SURGEONS.

SIR,—Will you kindly allow me, through your columns, to call attention to a subject which, in my opinion, is of very great importance as affecting the profession. I refer to the case of unqualified persons practising as veterinary surgeons, men who are not even registered as "existing practitioners."

I am aware that a considerable amount of sympathy is shown these "horse doctors," as they are sometimes called, because they happen generally to be locally connected with the place in which they carry on their operations. Let me give an instance.

A man who had for many years acted as a veterinary surgeon (unqualified) in the neighbourhood of the town in which I reside, died. His "practice" was immediately taken up by his son, who had previously been engaged as a groom in the locality. This individual is now practising and advertising himself upon his labels as a "veterinary surgeon."

A practice thus carried on is manifestly unfair to the profession, the members of which have devoted time and money to enable them to qualify for the difficult and delicate work which they have to perform.

I believe I am correct in stating that an Act of Parliament distinctly prohibits a practice being carried on by an unqualified person, and provides for heavy penalties being imposed upon any person who offends against this statute.

It seems to me the difficulty is how to put the law in motion. If a qualified V.S. takes proceedings, he is simply bidding for his own unpopularity in his neighbourhood, and is immediately charged with selfishness.

It is a matter of such vital interest to our profession, that I would suggest, in the event of the Council not being in a position to undertake it, that a fund should be started, and supported by an annual subscription from qualified veterinary surgeons (country ones especially, they being, I believe, most affected), which should be used for the purpose of prosecuting in all cases where a practice is illegally carried on.

"A Surrey Veterinary Surgeon."

THE EDUCATION OF VETERINARY STUDENTS.

Sir,—I can candidly endorse every word of "Actual Work's" letter in your last issue, on the above subject.

I could speak of many instances in which a holder of the diploma of the R.C.V.S., when brought to see a case of, say, simple lameness in a horse, had not the slightest idea in the world what to look for, and where to look. Some time ago I was called in to see a cow which had recently calved; two or three women, in a state of excitement, were around the animal, taking turn about at holding a large cloth to the vagina, with the object of keeping something in which would cause instant death should it escape. On asking about this terrible thing, I was told that Mr. So-and-So had been there some hours before, and had told them that "the womb was coming out," and on no account were they to allow it to do so. After some remonstrance, and not before I had promised that if it should come out I would replace it, I was permitted to make an examination, when lo! the "womb coming out" was found to be a normal placenta.

The sorry fact is, that the young vet. had never seen a cow calved in his life; hence the mistake.

When men are passed into our profession without a particle of experience or practical knowledge, how can we expect any advancement in veterinary science?

An ounce of experience is better than a pound of theory, and only in some such establishment as your correspondent suggests can men be trained, who otherwise have not the opportunity to acquire that knowledge which alone can make them successful practitioners. Jas. McDougall.

Old Kilpatrick, Glasgow.

TO THE MEMBERS OF THE YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

(We have been requested to publish the following letter.)

GENTLEMEN,—I am in receipt of your letter regarding the articles I have published in the *Yorkshire Weekly Post*. It is unfortunate, in view of the light in which you have looked upon them, that I should have undertaken to supply a limited number, of which some are already in type, the rest almost completed. For, although I am convinced that the articles can never be of the slightest harm to the members of the profession, yet I should have been willing to have conformed to your desire.

The erroneous opinions of the public on veterinary matters are a source of much evil, not to the public only, but specially also to the profession, and error is pregnant with evil fruit at all times. Moreover, the writing on veterinary matters in popular journals is a course adopted in some of the best known periodicals; I am, therefore, at a loss to see the object of your noticing in particular my special set. I am, gentlemen, of opinion that the more the public arrive at a clear understanding of the disease of animals, the more they will seek your advice and careful attention, and the more they will appreciate your services.—I am, yours faithfully,

J. B. GRESSWELL.

TO CORRESPONDENTS.

F.R.C.V.S.—It will be better now to let the subject drop, and end the discussion, as it is about to be brought before the Council of the Royal College.

Several communications, as well as the report of the Norfolk and Eastern Counties Association, which cannot appear this month, will be published in our next issue.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from W. O. Williams, Edinburgh; C. J. Valentine, Adelaide, South Australia; R. H. Harrison, Boston; W. Broughton, Leeds; J. A. Nunn, Lahore; A. Broad, London; "A Surrey Veterinary Surgeon"; W. Shipley, Great Yarmouth; F. Smith, A.V.D., Bangalore; T. Greaves, Manchester; R. Poyser, A.V.D., Woolwich; T. Donald, Wigton; E. Kitchin, Liverpool; H. Leeney, East Grinstead; T. H. Lewis, Edinburgh; R. S. Barcham, Paston; J. McDougall, Old Kilpatrick.

BOOKS AND PAMPHLETS: *Dr. Putz*, Ueber den Kampf gegen die Lungenseuche; *W. Robertson*, Notes of Lectures on the Practice of Equine Surgery; *E. Vogel*, Hering's Operationslehre fur Tierarzte; *C. Steffen*, Handbuch Thierärztlichen Chirurgie; Annuario d. R. Scuola Superiore di Medicina Veterinaria di Milano per l'Anno 1884-85.

JOURNALS, ETC.: *Centralblatt für Chirurgie; Tidscrift für Veterinar-Medicin; American Veterinary Review; Journal of Comparative Medicine and Surgery; Lancet; Scottish Agricultural Gazette; Wochenschrift für Thierheilkunde und Viehzucht; Animal World; British and Colonial Druggist; Der Thierarzt; Mark Lane Express; Annales de Médecine Vétérinaire; Live Stock Journal; Kansas Live Stock Indicator; Clinica Veterinaria; Edinburgh Medical Journal; Chicago Live Stock Journal; Œsterreichische Vierteljahresschrift für Wissenschaftliche; Der Hufschmied; Archiv für Wissenschaftliche; Revue Vétérinaire; Repertorium für Thierheilkunde; Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie; Archiv für Wissenschaftliche und Praktische Thierheilkunde; Zeitschrift für Vergleichende Augenheilkunde.*

NEWSPAPERS: *York Herald; Edinburgh Courant; Lahore Civil and Military Gazette; Eastern Daily Press; Madras Times; Madras Mail; Liverpool Mercury.*